

AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1898.

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EDITORIAL.

EUROPEAN CHRONICLES.

SALINE TRANSFUSIONS IN VETERINARY MEDICINE.—Washing of the blood by subcutaneous injections of saline solutions is a process of therapeutics which has received yet but little attention in veterinary medicine, and which by the recent publications of Mr. Bimes, of the Toulouse Veterinary School, and of Mr. Bissauge, has become for the moment the question of the order of the day. In a series of long articles published in the *Revue Veterinaire*, the former has given the history of this therapeutical process, as it was first applied in human medicine (origin of the method, its object, the means put into use, the physiological effects, its therapeutic applications). It is this last paragraph which deserves the attention of veterinarians. Lock-jaw, infectious pneumonia, typhoid fever, septic metritis have been treated by either venous or subcutaneous injections of saline solutions, on some occasions renewed, and in several instances the treatment was followed by recovery.

Mr. Bissauge has followed the publication of Mr. Bimes by a record of several instances where subcutaneous injections were used against various forms of hæmorrhages (epistaxis, hæmorrhage of castration, post-partum hæmorrhage), tetanus, parturient apoplexy, infectious pneumonia, distemper of dogs; and incomplete, perhaps, as the results may seem to be, it has proved sufficiently successful in his hands to justify

him that properly applied this treatment will sometimes "save the life of animals considered as positively condemned and in cases where the veterinarian would think himself powerless." For him the indications for saline injections are all cases where vascular hypotension is present: anæmia, hæmorrhage, surgical infections, intoxications of the blood, and, certainly, good results may be looked for in the cases alluded to above and in which he has tried them. The principal contra-indications are diseases of the kidneys and some lesions of the heart.

The application of saline solutions has been carried out already by Prof. Labat, of Toulouse, who has resorted to venous injections (in the jugular). The technic of the operation is quite simple. The canula of a trocar (3 millimeters in diameter) is attached to a funnel. These are thoroughly disinfected and heated to 38° C. The funnel being filled with the saline solution, the canula of the trocar is introduced into the vein already open and the contents poured slowly into the circulation. The funnel is kept full so as to avoid the introduction of air.

The subcutaneous method is perhaps easier and less dangerous. A rubber tube, about 1 metre 50 cent. long, secured by one end on the stop-cock of the bottom of a recipient, able to contain 3 litres of solution, and having at the other free end a fine needle, constitutes the required instrument. The recipient filled, the stop-cock is opened, a little of the fluid is allowed to escape and the needle thrust quite deeply in the subcutaneous tissue.

The solution recommended by Bissauge is made of 8 grammes of chloride of sodium in one litre of water; it ought to have the even temperature of the body, or be a little higher; and the quantity to inject has been one litre in dogs, from 3 to 5 in bovines and in horses.

The large swelling resulting from the injection generally subsides in 40 or 50 minutes.

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ETIOLOGY AND PATHOGENY OF SPAVIN.—How different would be the general idea of many if they knew that the word spavin, which to their minds is merely an exostosis, a bunch of

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the antero-internal part of the hock, means the long series of pathological lesions which veterinarians are more apt to understand under the general classification of hock diseases. And, yet, while most veterinarians realize the true condition of affairs and appreciate the fact of the many alterations that can be found under the general denomination of spavin, there remains some doubt as to the manner in which the lesions develop.

The various opinions of pathologists can be divided into two groups: first, those that admit that the morbid process progresses from inwards outwards, from the articular surfaces or central parts of the bones towards the periphery, and, second, those which accept the opposite progress, viz., from the periphery towards the centre. Among the former must be named Joly, for whom the pathological process means successively: *first*, a dry arthritis of the lower tarsal articulations (the spavin-arthritis); *second*, ankylosis of the inflamed articular surfaces (spavin-ankylosis); *third*, a localized exostosis on the inner side of the base of the hock (spavin-exostosis); *fourth*, extension of the process beyond the lower tarsal articulation with irritation of the circumference of the superior tarso-metatarsal and tarsal joints. For Prof. Eberlein the process differs. The first lesion is an osteoporosis, rarifying osteitis, involving the cuniforms and metatarsals, followed by a condensing osteitis, with chondritis and proliferation of cartilaginous cells and followed sooner or later by ankylosis. Sometimes the inflammation passes directly from the bone to the periosteum of the small tarsal bones and gives rise to the development of exostosis on the inferior parts of the hock.

The interest promoted by such diversity of opinion was stimulated recently at the Société Centrale by a very interesting paper presented by the learned professor of Alfort, Mr. Barrier, who among his conclusions says that spavin consists essentially in a chronic, dry arthritis, generally ankylosing and deforming, which starts in the articulations of the infero-internal part of the hock and has a tendency to spread to the superior from below upwards and from inwards outwards.

The progress of the morbid process is as follows: (1) a sprain (effort) of the desmous apparatus of the surface or depth of the small tarsal joints; (2) an osteitis and osteo-periostitis, first rarifying, then condensing, of the bony pieces affected or of those surrounding, which receive too heavy percussion in locomotion; (3) an ankylosis at the periphery, sometimes not difformans, but ordinarily granulating and encircling; (4) a dry arthritis, ending in solid central ankylosis or progressive osteoporous difformation with eburnation of the diseased articular surfaces.

For Mr. Barrier, spavin is not hereditary. It is the bad formation of the hocks which predispose to it.

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CONGRESS OF TUBERCULOSIS.—As I announced in a previous number of the REVIEW, the fourth Congress for the Study of Tuberculosis was held in Paris from the 27th of July to the 2d of August. The attendance was very large and the veterinary profession well represented, not only from France, but from Denmark, Germany, Switzerland, Italy and even America. From that country Dr. Schweinitz, of Washington, was to present papers relating to the matters in discussion. He had made all his preparations to leave New York by the doomed French steamer *La Bourgogne*, when at the last moment he was informed that he could not be spared from his work at the Bureau of Animal Industry. A few days later, the noble steamer met with the terrible accident which put so many in mourning. Dr. Schweinitz had a narrow escape.

The Congress was presided over by Prof. E. Nocard, who filled the duties of the position with great success and who carried the honors of applause at the various communications that he presented. Prof. Bang, Prof. Arloing, as veterinarians, drew much attention on matters of importance and interest in a veterinary point of view. Out of the seven special secretaries appointed to record the doings of the Congress, four of them were veterinarians.

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For veterinary importance the Congress has been a great success.

The transactions of the Congress will be issued at a short date, with all the papers that were presented. I will extract from it those that are of special interest for the veterinarian and present them to the readers of the REVIEW as soon as possible. At the same time I give you the principal resolutions passed at the last meeting which relate to veterinary medicine :

The Congress, considering that the constant progress of tuberculosis of bovines threatens seriously public wealth and health, that contagion is the only truly efficacious cause of its progress, insists upon the urgent necessity of legislative action ordering :

(*a*) Separation of diseased from healthy animals ; (*b*) Interdiction of sale of diseased animals, for any other objects but slaughtering ; (*c*) Inspection of dairies, producing milk for public alimentation, and immediate killing of all cows affected with tuberculous mammitis ; (*d*) Sterilization or at least pasteurization of the milk for the making of butter and cheese ; (*e*) Generalization of a service of inspection of meat, on a plan more or less similar to that which has existed in Belgium for several years.

A. L.

THE REVIEW AND THE OMAHA MEETING.

Many REVIEW readers are not members of the U. S. V. M. A.; many who are both members of the Association and readers of this journal will be unable to make the journey and engage in the deliberations of the convention. They are none the less interested in the proceedings and jealous of the success of the meeting. They will anxiously await the news of its personnel and profit by the papers and discussions which take place. They will, however, miss the pleasure of the trip, the genial fellowship of the members from all points of the national compass, and the splendid programme of entertainment which we published in the August issue. They will not enjoy the intellectual programme quite so well as though they were upon the

ground and enabled to participate in it. But the REVIEW means to have them get as much benefit from the convention of 1898 as it is possible under the circumstances; and to that end it will publish in its October edition a full and graphic *résumé* of the three days' meeting, with as many of the papers read as it is possible in that number.

We have made the assertion that the forthcoming meeting is to eclipse all predecessors. Watch the prediction.

A FEW THOUGHTS TO PONDER.

DO YOU KNOW that only about one-fourth of the veterinarians of America read the veterinary periodicals?

YOU DO KNOW that it is imperatively necessary that they should, if they are to accompany the advance guard of the profession.

YOU may say that the magazines are not as great as they should be. But

YOU know that they are as great as they can be with their present limited financial support.

Do YOU wish them better?

If so, YOU induce one fellow-practitioner who does not read them to send three dollars for one year's subscription.

YOU will be only doing YOUR DUTY, and will be aiding in a practical manner to build up the profession of your choice.

Your brother veterinarian will thank you for what you did before the year has expired.

PARTURIENT APOPLEXY is a disease the pathology of which is about as well understood as is that of azoturia, and almost every practitioner has his own ideas as to its therapy. Not a few have settled down to a belief that severe cases die and mild cases recover. Any investigator who can furnish a reasonable explanation of its etiology and a treatment which will cure 46 out of 50 is entitled to the most respectful attention and conscientious emulation. Veterinarian Schmidt, of Denmark, has electrified Europe with his discovery, and practitioners are re-

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porting great success by the adoption of his methods. We begin the publication this month of his scientific contribution to veterinary literature upon the subject, for which our readers are indebted to Prof. W. L. Williams, whose untiring energy has induced him to translate it for the benefit of the profession of this country.

ORIGINAL ARTICLES.

THE MICROBE OF PLEURO-PNEUMONIA.

By MM. NOCARD AND ROUX.

With the collaboration of *MM. Borel, Salimbeni and Dujardin-Beaumetz.*

Translated by A. LIAUTARD.

(Continued from page 240.)

APPENDIX.

FIRST EXPERIMENT.—May 16, 1896, at 8 A. M., a Flemish cow, suffering with acute pleuro-pneumonia, is killed. She had been sent to Alfort for clinical studies. At the autopsy are found: subacute hepatization of almost the entire right lung, the anterior lobe and the superior border only are free from disease. No effusion in the pleural sac. Dry pleurisy on the whole hepatized surface. An enormous quantity of yellowish and limpid serosity fills the perilobular and subpleural lymphatic sacs. In some points, the pleura is raised by true lakes of serosity; with difficulty 20 c.c. of it are collected *pure*, and kept in 50 sterilized closed glass tubes.

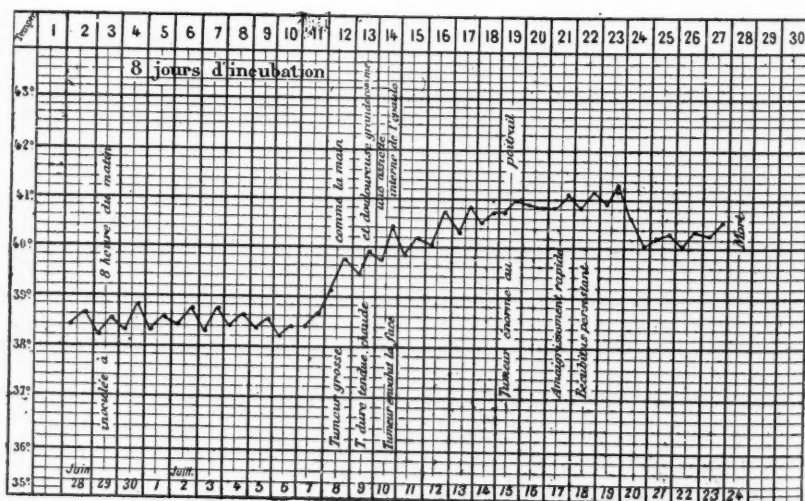
June 2, two collodion bags are prepared and filled with peptone bouillon inoculated with a trace of the serosity collected May 16 (a small drop for 10 c.c. of bouillon). The serosity which remained on the glass pipette with which this inoculation was made was inoculated on Agar and in bouillon, these inoculated tubes were placed in the thermostat. They remained sterile. Both collodion bags, hermetically closed, are placed in the peritoneum of two rabbits. These rabbits are killed June 27; they are thin, but still vigorous. The collodion bags are

intact; they contain an opal liquid, a little suspicious, slightly albuminous, in which numerous small refringent motile bodies are moving; they are so small that they can be distinguished only by a high magnifying power (about 2000 diameters) and yet their form cannot be made out.

June 29, 8 A. M., we inoculate a Breton heifer (No. 1) by subcutaneous injection, back of the left shoulder, with five drops of the opal liquid taken on 27th from one of the collodion bags. These five drops were first diluted in 2 c.c. of sterilized bouillon.

Up to July 7th nothing abnormal is observed on the inoculated cow; she is gay, has good appetite; her temperature remains in the neighborhood of 38.5° as before the injection. July 8th, the temperature is 39.1° in the morning, 39.7° in the evening; from that date it keeps rising slowly and gradually to reach 41.3° on July 19th.

No. 1.—Breton heifer, 10 months old, inoculated June 29, 1896, with 5 drops of pleuro-pneumonic culture in collodion bag.



July 7, there was a small swelling at the point of injection; on a surface as broad as the palm of the hand, the skin seems to be raised, it has lost its suppleness, is a little warm and sore.

These characteristics become rapidly more marked; the swelling increases in all directions; on July 10, it measures 25 centimeters in diameter; is hard, tense and very painful, the animal strikes with its horn or feet at the hand that feels it. The outlines of the swelling are well marked by a projecting border.

The enlargement spreads rapidly forward, backward and downward; it reaches under the shoulder, which it pushes away from the trunk and almost renders it motionless; it extends under the abdomen as far as the udder; and on July 16, it forms on the dewlap an œdematous tumor, warm, tense and painful, as big as the head. Little by little the arm and the forearm become engorged and the slightest pressure produces great pain, expressed by the animal with a dull and prolonged groan. The appetite, which has been good up to July 12, diminishes little by little; from the 18th the animal refuses all food.

July 19, the animal is cast on an operating table; after deep cauterization of the skin, a large quantity of *pure* limpid serosity, amber colored, is collected in sterilized glass tubes, where it flows so profusely as to moisten the cork of cotton; after the operation, a stream of serosity runs from each puncture in great quantities.

The following days, the animal remains stretched on her bed, unable to rise or even to stand up; she dies during the night of the 23d to the 24th.

At the post-mortem, an enormous œdematous infiltration is observed, occupying the entire right side and all the lower part of the body, from the maxillary space to the udder. At the dewlap, it forms a mass larger than the head of the animal; the right anterior leg is raised, pushed away from the trunk and infiltrated in its whole length; the arm and forearm are twice their size, notwithstanding the resistance of their enveloping aponeuroses; the cellular tissue is invaded as far as the bones. Every cut with the scalpel is followed by the running of a stream of serosity. The connective tissue looks gelatinous; its meshes are distended with an enormous quantity of limpid, amber serosity. On a level with the shoulder and arm, the infil-

tration of the connective tissue has extended to the interfascicular tissue, in such a way that, on section, the muscle has the aspect of being divided in sections, it seems sclerous; only the connective tissue between its bundles of muscle are very œdematous; between them, the tissue proper of the muscle has a pale washed color, and is soft in its consistency. This condition exists also in the intercostals; the serous infiltration has spread into the sub-pleural connective tissue, where it forms a thick and fluctuating cushion. The same exists also in the cellular tissue of the anterior mediastinum. The pleural sac contains about two liters of yellow serosity, somewhat reddish. Both pulmonary lobes are healthy; there is not the slightest interstitial or sub-pleural infiltration.

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One might suppose that the result of this experiment is because it was only a simple dilution of the virus which had been injected; this is not admissible. The original bouillon was inoculated with one drop of sub-pleural serosity, say 1-20 of a c.c. for 10 c.c. of bouillon; the dilution then was at 1-200—5 drops from the liquid of the bag, diluted to 1-200, or 1 cubic centimeter of a dilution to 1-800; the inoculation has been made forty days after the collection of the virus—that is, at a date where ordinarily the serosity has lost its virulency; let us observe, besides, that for twenty days the serosity, diluted to 1-200, has stood a temperature close to $+40^{\circ}$ (in the peritoneum of the rabbit), a condition most unfavorable to the preservation of virulence; let us also say, that the incubation has been very short and the progress of the infection very rapid, and we will conclude that the results observed are due to the cultivated microbe, and not to a simple dilution of the pleuro-pneumonic virus.

The following experiments will remove all doubts:

SECOND SERIES OF EXPERIMENTS.—July 19, 1896, a great quantity of *pure* serosity, which is in the connective tissue of the left costal region of heifer No. 1, is collected.

August 1, three collodion bags receive: one, fresh bouillon

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not inoculated (to be used as *witness*); a second, the same bouillon, to which has been added 1-10 of the serosity collected on July 19; the third, a dilution to 1-1000 of the same serosity. The two tubes of inoculated bouillon, which has been used to fill the collodion bags, are put in observation; they remain sterile. The first two collodion bags are placed in the peritoneum of a rabbit (b, 116); the third one in the peritoneum of another rabbit (c, 135).

The two rabbits are killed August 17. The two bags of rabbit b, 116 are intact; the bag *witness* (bouillon not inoculated) is absolutely limpid; the other is very cloudy; the liquid is swarmed by the small refringent mobile points observed before. The bag of rabbit c, 135 contains an opal liquid, less cloudy than the other; it also contains a great number of microbes.

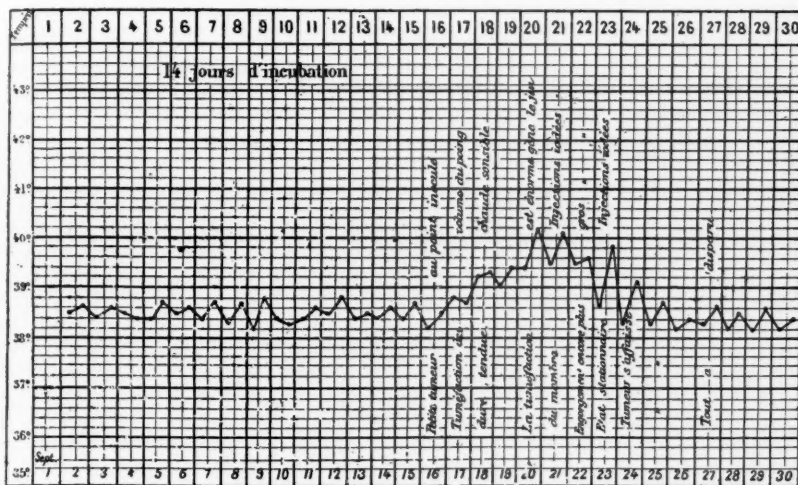
With the culture of rabbit b, 116 two other dilutions are made and put in collodion bags; one of these (dilution to 1-100) is placed in the peritoneum of a rabbit (i, 41); the other (dilution to 1-1000) in the peritoneum of another rabbit (i, 79).

These two rabbits are killed September 1; the contents of both sacs is cloudy and full of the refringent points already described. Sept. 2 the liquid from the bag of rabbit i, 79 is inoculated to a fresh Breton cow (No. 2); the other is used for two other bags which are inserted in the peritoneum of two rabbits: No. 48 (dilution to 1-200), and No. 92 (dilution to 1-500).

Rabbit No. 92 dies Sept. 9, cachectic, without apparent visceral lesions; the bag is intact, the liquid is cloudy and contains nothing else than the ordinary refringent points. A dilution to 1-60 is made with it and put in two bags which are placed in the peritoneum of a rabbit, No. A, 357. Let us say now that, at the post-mortem of this rabbit, both bags were found broken, and that that series of passages of cultures was thus interrupted.

Rabbit 48 is killed Sept. 18; he is very thin; the collodion bag is intact, and contains a very cloudy fluid, full of the ordi-

No. 2.—Cow, 6 years old, inoculated Sept. 2, 1896, with 10 drops of culture in bag of rabbit 1,79 (dilution 1-10,000.)



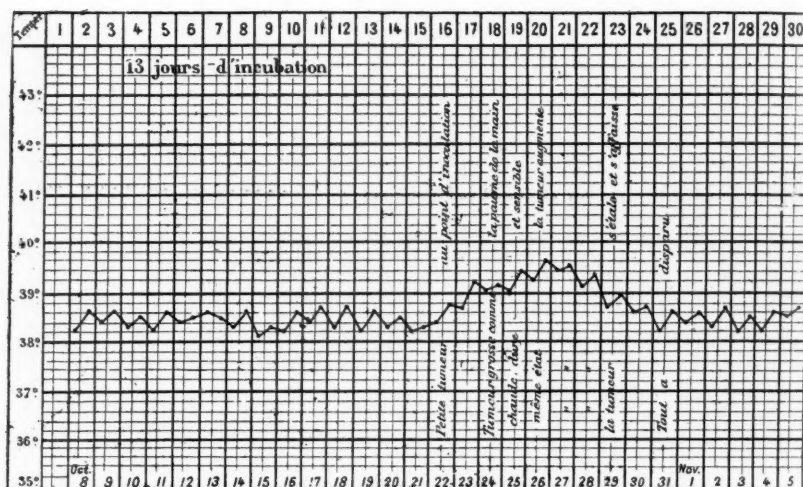
Cow No. 3, received October 8th, 1 c.c. of a fifth culture in bag, representing a dilution to 1-40,000,000 of the serosity collected July 19.

This animal presented nothing abnormal up to October 21; 22d, there was at the point of inoculation, a hard, painful swelling, as big as a nut; 23d, the nodosity is surrounded by a quite large, soft œdema, the temperature is 39.2°; 24th, the swelling is as wide as the palm of the hand, tense, warm and painful; 26th, the swelling, always very tender, has increased, temperature 39.6°; this condition remains stationary during the following days, then all diminishes, is resorbed, the temperature returns to normal; 31st, all is normal.

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If the accidents observed in cows No. 2 and 3, after the inoculation of cultures in collodion bags, were truly of pleuro-pneumonic nature, these animals must have become immunized against the natural disease and against the inoculation of the virulent solution. The proof was necessary. The following experiment confirms it:

No. 3.—Cow, 5 years old, inoculated Oct. 8, 1896, with 1 c.c. of bag culture of rabbit B 833 (dilution 1-40,000,000.)

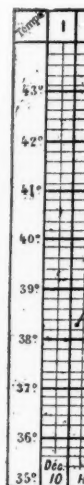


December 11, 1896, two lungs of pleuro-pneumonic bovine were sent to Alfort: the right lobe in its posterior half is the seat of a recent hepatization; the tissue is gorged with yellowish and limpid serosity; some cubic centimeters of it are collected (pure) which will serve to inoculate by injection under the skin, back of the shoulder, cows No. 2 and 3; each receives twenty drops of serosity, and cow No. 4 (Normandy, 18 months old, with actinomycosis of the jaw), which will be *witness*, receives only 10 drops of serosity.

While both cows, Nos. 2 and 3, have resisted the injection without presenting anything abnormal, no swelling, nor even temporary fever, the *witness* died the 22d day with an enormous swelling containing more than 10 litres of serosity. The incubation has been only eight days; December 18th, the fever started and the œdematous swelling at the point of inoculation made its appearance.

THIRD SERIES OF EXPERIMENTS.—March 9, 1897, sub-pleural serosity is collected pure from a cow killed. On the 12th, two collodion bags are prepared and filled with a diluted solution of serosity in peptone bouillon to the 1-1000. One bag is

No. 4.



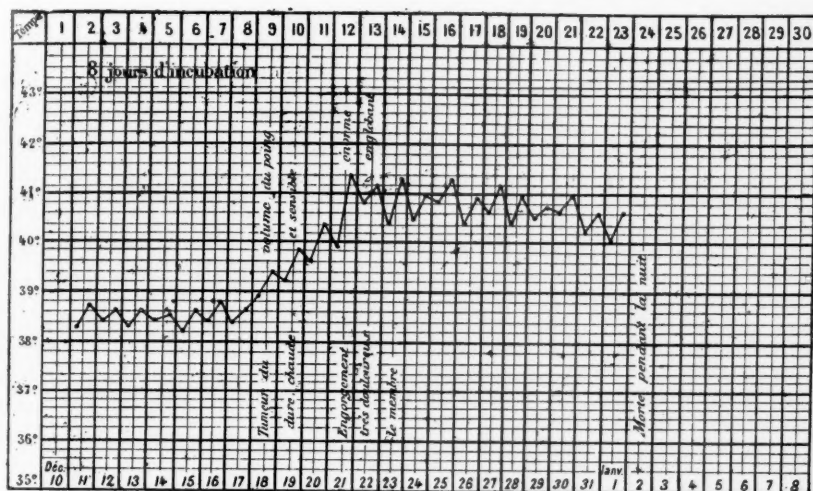
placed in a pig. A pig is fed the bag culture the 1-10 in the p are killed preceding tion to t shoulder

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No. 4.—Normandy Cow, 18 months (actinomycosis), inoculated Dec. 11, 1896, with 10 drops of pulmonary serosity.



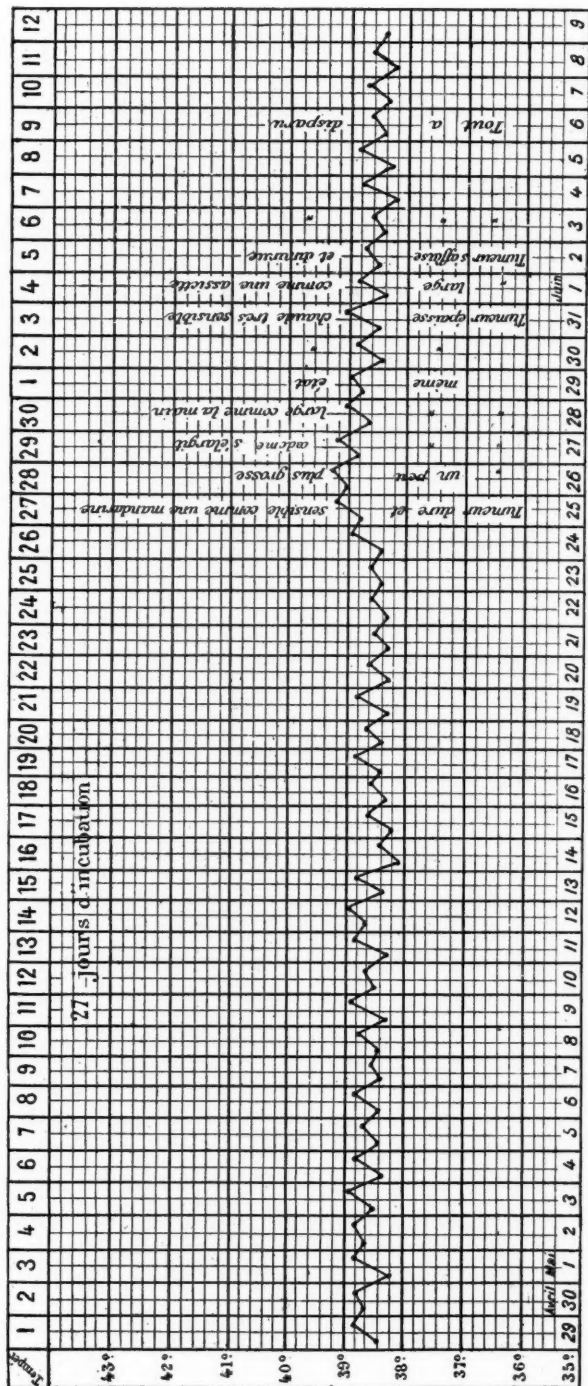
placed in the peritoneum of a rabbit, the other in that of a guinea pig. April 4th, both animals are killed: the bag of the guinea pig is full of transparent limpid liquid; in the rabbit, very lean, the bag is found very flask and containing an opal fluid where the ordinary refringent small bodies are swarming. With the culture from the rabbit, bouillon is inoculated and dilutions to the 1-100 and the 1-1000 are put in two bags which are inserted in the peritoneum of two new rabbits. April 28th, both rabbits are killed; culture has taken place in both bags, identical to the preceding one and very rich. April 29th, 10 drops of the dilution to the 1-1000 are injected under the skin, back of the left shoulder, to a Breton cow, 8 years old (cow No. 5).

Here is the *résumé* of the observation:

Up to May 24th, everything remains normal; no fever, no local lesion.

May 25th (twenty-seven days after the inoculation), a tumor appears, as big as a Mandarin orange, hard, painful, at the point of inoculation; this tumor spreads little by little. May 31st, it is as big as a soup plate, extends under the shoulder, stiffens the movements of the animal, remains always very painful, the cow

No. 5.—Cow, 8 years old, inoculated April 29, 1897, with 10 drops of a second culture in bags
(dilution 1-1,000,000).



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strikes at the hand that touches it. From this date the swelling diminishes rapidly. June 6th all has disappeared.

Reinoculated Oct. 7, 1897, with one cubic centimeter of pleuro-pneumonic serosity collected on the 3d from a lung, seat of an acute lesion; this cow has presented no fever, nor local lesion at the point of inoculation. She was certainly vaccinated by her treatment in the month of May.

FOURTH SERIES OF EXPERIMENTS. — January 19, 1898, a lung with lesions of acute pleuro-pneumonia, allows the collection of several glass pipettes of *pure* limpid serosity from the sub-pleural lymphatic sacs. After having, by inoculation on agar and in bouillon, tested the serosity to be sure that it was free from ordinary bacteria, bags of collodion and of reed cane were prepared and filled with a dilution to 1-200. On Jan. 29th these bags were inserted in the peritoneum of two rabbits and of two guinea pigs. Each subject received one bag of each kind.

February 10th the four animals were killed.

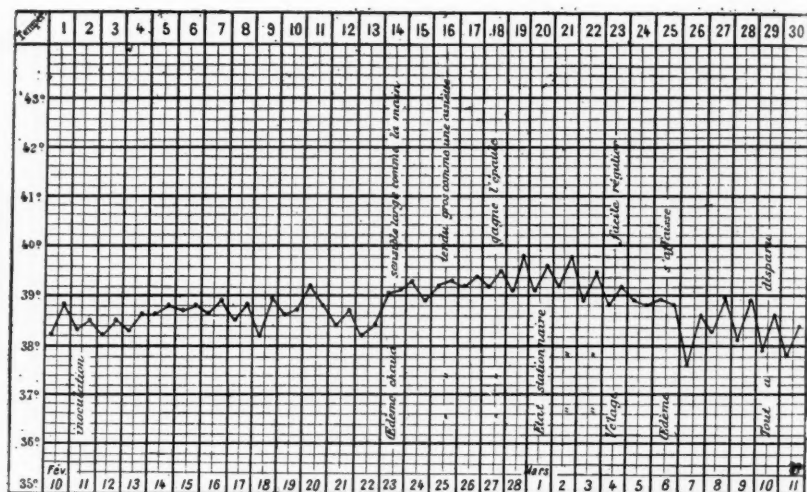
The bags of the guinea pigs have given no culture; they contain a limpid and transparent liquid.

On the contrary, the bags of the rabbits have all cultivated; the liquid that they contain is cloudy, opal, free of the motile and refringent small points. In the collodion bags the culture is less abundant, it is very rich in the reed cane collodion; the liquid is milky.

February 11th at 9 A. M. a cow (No. 6) is inoculated under the skin, back of the left shoulder, with five drops of reed cane bag culture, diluted in 2 c.c. of sterilized bouillon.

Up to the 22d nothing abnormal; on that day there is at the point of inoculation a little sensibility on pressure, nothing else; the temperature is 38.5°. On the 23d, swelling a little hot and painful, as big as the palm of the hand. The temperature goes above 39°. On the 25th there is a hard swelling, tense, warm, very painful, the size of a plate; the following days, the swelling engages under the shoulder, the animal resists all manipulations; the humor remains stationary to March 2d, then gradually and slowly diminishes and disappears.

No. 6.—Cow, 4 years old, in calf, inoculated Feb. 11, 1898, with 5 drops of culture in reed-cane bag (11 days of incubation).



March 10th, the temperature, which had risen to 39.8°, goes down from March 3d. On the 4th the cow delivered normally and since has not had the slightest indisposition.

On February 10th several tubes of bouillon peptone serum, had been inoculated with a ball of the culture in reed-cane bag; Martin bouillon, added with a little beef or rabbit serum, gave, alone, a culture, the fluid assuming little by little the opalescent aspect of the liquid of the bags; successive cultures were made, and on February 26th a cow, No. 7, three years old, freshly calved, was inoculated back of the right shoulder with 10 drops of a fifth culture *in vitro*.

Here is the *résumé* of the observation:

Calving and delivery occurred February 23d; after conditions somewhat regular; however, for several days the cow passed large quantities of bloody grayish discharge, slightly purulent; then everything went normal. The calf, separated from its mother, was fed from the pail; the cow gave four or five litres of milk a day.

Nothing to notice up to March 8th; then appears a swelling the size of the hand, hot, hard, painful; this increases

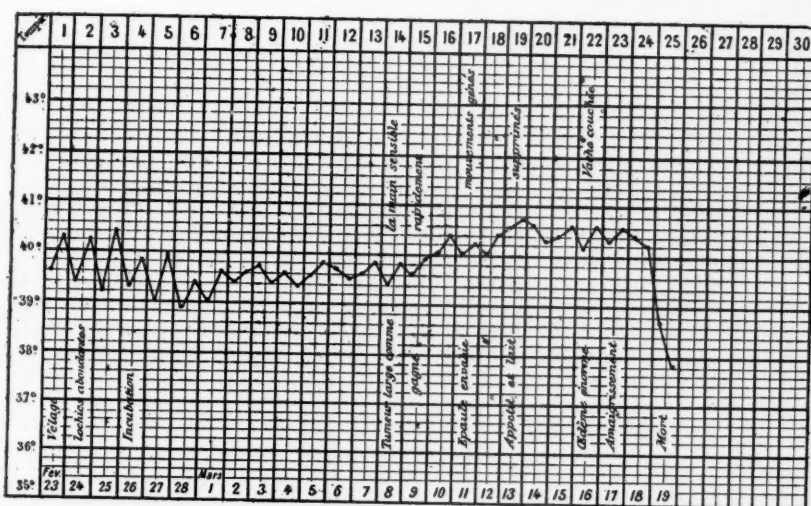
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No. 7.—Cow, 3 years old, calved Feb. 23, inoculated Feb. 26, 1898, with 10 drops of a fifth culture, *in vitro* (10 days incubation).



rapidly during the following days, it extends under the shoulder, pushes it from the trunk and stiffens the leg. On the 11th the temperature is about 40° C., and remains at this point until death. It reaches 40.7° C. on March 13th. At the same time the swelling increases in all directions, to the dewlap, where it forms a tumor as big as a child's head, under the abdomen, where it forms an œdematous swelling as thick as the arm, and back to the udder; the milky secretion has diminished, the appetite is gone, the animal loses flesh, rumination remains, but is slow and irregular.

March 17th, swelling is enormous, the animal carries no more weight on the left anterior leg, the arm and forearm is largely swollen, any movement is impossible.

March 18th, the animal is stretched on the bedding, unable to rise. She dies on the 19th, towards 2 o'clock P. M., with hypothermia (37.8°).

Post-mortem.—In removing the skin an enormous quantity of citrine and transparent serosity escapes. The subcutaneous tissue is the seat of a large infiltration which in some points is more than 10 centimeters thick; the exudation occupies all the

inferior face of the body, from the neck to the udder ; it goes up the trachea in the jugular groove, descends the forearm, inside as well as outside the aponeurosis, dissecting the muscles further down than the knee. There exists a little serosity in the pleural and pericardial cavities, but the lungs and all the viscera are absolutely sound.

March 19 a three-year-old Breton cow (No. 8) is inoculated with 1 c. c. of a tenth culture (*in vitro*) of the microbe of pleuro-pneumonia in bouillon Martin-serum.

This observation will be published later on.

PARTURIENT PARESIS.

(THE SO-CALLED CALVING-FEVER, OR PARTURIENT APOPLEXY.)

STUDIES AND INVESTIGATIONS INTO ITS CAUSE AND HANDLING.

BY J. SCHMIDT, VETERINARIAN, KOLDING, DENMARK.

Translated for the American Veterinary Review by W. L. WILLIAMS, New York State Veterinary College.

The writings which exist in our literature upon the so-called calving-fever indicate that both scientific investigators and practitioners have long worked assiduously to properly elucidate this affection. It may well be asserted, however, that the so-called calving-fever is one of the most enigmatical, and hence interesting, diseases of our domestic animals.

Aside from the fact that this malady has aroused a special interest in its scientific aspect, we have also to deal with a very serious affection, especially in valuable dairy establishments, in which it annually claims many victims from among the choicest milk cows, and which through the ever-increasing intensity of agricultural development attains from year to year a greater extension.

The disease has not for this reason been at all neglected, either from the standpoint of the agriculturist or the veterinarian. All the more earnest and scientific work has been de-

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voted to it. The results, however, have been uniformly indifferent.

Formerly there were ordinarily distinguished several forms of the malady. The reason for this existed partly in the various grades of the disease, partly in certain complications and also in the confusion of this with other diseases, especially with metritis (septicæmia puerperalis) and with persistent decubitis after parturition. In a like manner we are to explain the great variety of symptoms described.

Accordingly it has become the custom to designate in a more restricted sense as calving-fever or parturient paresis only the so-called paralytic form of calving-fever with its characteristic nervous symptoms.

The symptoms of calving-fever are now well known. Though these may vary to so great a degree in different individuals that, *e. g.*, the temperature may vary from 35° to 41° C. (95° to 105.8° F.) yet it is ordinarily easy to diagnose the disease. On the other hand, the cause of the malady remains yet an unexplained riddle, although much earnest thought has been expended upon its solution; so long as the etiology is not sufficiently known, the therapeutics must be pre-eminently experimental. Certainly these experiments have rendered no immediate value. But the negative results of therapeutics, and accurate observations on the development of the disease, its symptoms, and its course at various times has furnished a certain basis for criticism of the various hypotheses announced. And since these hypotheses have mostly, in the course of time, proven themselves untenable, it has become necessary to consider and investigate other possibilities.

I have rested my own conclusions upon the basis of general experience; *that the disease notably occurs chiefly in well nourished and very profuse milking cows, cows which have easily given birth to the calf, very seldom, however, after difficult parturition or following an abortion; that, further, it is observed chiefly at the most vigorous age in life and at the age of greatest milk production, and almost never in primiparæ, as well as com-*

paratively seldom in cows of the beef breeds, and seldom in cows in bad environments.

Concurrently I have attempted to draw parallels between parturient apoplexy and similar symptoms whose causes are less enigmatical.

Among the various recognized hypotheses in the cause of parturient paresis which have been announced from time to time, two have attained a certain noteworthiness in the last two decades. I will confine myself therefore chiefly to the consideration and criticism of these two. The one is that suggested by Franck,* according to which the disease called eclampsia by the author should have its basic etiology in a disturbance of the circulation, an elevated blood-pressure in the aorta, having its origin in a too rapid contraction of the uterus after birth. From this should ensue: cerebral congestion, cerebral cedema and finally cerebral anæmia with unconsciousness and paralysis.

This view won, at the time, many adherents, and though the majority of veterinarians have now abandoned it, it is still shared by a considerable number.

The second hypothesis is based upon the belief of the genesis of a toxic substance in the womb. This is the most generally accepted view at present, and, although numerous objections have been interposed, yet no conclusive evidence of its untenability has been adduced. It was already proposed by Stockfleth† in 1870, and later in 1884 upon a somewhat different basis by Schmidt-Muhlheim.‡ The latter authors agreed with Franck's hypothesis that the affection had its genesis in a too rapid uterine contraction whereby the lochia in the uterus was shut in and aeration prevented, so that some of the débris undergoing a certain decomposition produced ptomaines, which through their resorption into the blood produced analogous symptoms to those observed in man after the ingestion of poison sausage.

A too rapid contraction of the uterus which forms the basis of the said hypotheses of both Franck and Schmidt-Muhlheim, occurs with relative frequency after easy deliveries, and since parturient paresis likewise occurs chiefly after such births, the possibility is strongly suggested that a certain connection exists between these relations.

Here, however, is presented the first weak point of both

* *Thierärztliche Geburtshilfe*, 1876.

† *Tidsskrift for Veterinærer*, I. R. Bd., 18, S. 338.

‡ *Deutsche Zeitschrift für Thiermedizin und Vergleichende Pathologie*, 1884, Bd. II, S. 68.

hypotheses. If it be true that so essential a bond exists between a too rapid uterine contraction and parturient paresis, then there must be such antecedent conditions to each case of the disease. This is not, however, the case. *The os uteri is as a rule still partly open* if the disease occurs during the first 24 hours after labor. It can also be demonstrated that the uterine contraction is fully as slight as is usually the case from this standpoint in sound cows.

To the contrary, it is not infrequently less contracted than in health. By means of manual exploration of the genital organs of a great number of patients, in which the development of parturient paresis occurred after widely varying duration of time (hours and days) I came to the conviction that the power of uterine contraction is generally normal until the cause of the disease begins to insinuate itself, but that the contractility of the womb then ceases or is decreased, because its muscular tissue like other muscular groups, is paralyzed as soon as the disease has begun. If the disease develops a few hours after birth then the os is found regularly open, while if the cow has remained sound for a day or two after parturition, it is frequently found almost closed. Patients are not seldom met with which have had no normal appetite for food or drink from the time of parturition till the disease first makes itself evident one or two days later by symptoms of paralysis; in these patients it is always found that the uterine contractility is diminished. It can, by these symptoms alone, almost be determined, even when the history is wanting, if a cow suffering from parturient paresis had developed the primary stages of the malady immediately after calf-birth. I have observed these relations for a number of years and could therefore cite many cases in support of it.

I assume, though, that it will suffice to refer to the case reports which follow later, in which observations are included regarding the state of contractility of the womb.

Besides we find now and then—Franck freely admits: very rarely—cases in which the afterbirth has not yet been expelled, when they have come under treatment for parturient paralysis.

In these cases the afterbirth is almost always very readily detached. So it has been at least with most of the cases which have fallen under my charge.

This is strong evidence that no powerful contraction of the womb had become established, since otherwise the feebly attached placenta would have been expelled by the normal action of the uterus. Stockfleth* says also in harmony with this, that in cows attacked by milk-fever the contraction of the uterus is wanting.

Hereby the basis of both hypotheses is destroyed. The rapid contraction of the uterus can neither cause, nor influence the cause of, the disease; on the contrary, this enfeebled contractility is itself a result of the disease.

According to Franck's hypothesis immediately after parturition there should occur conditions which favor extreme blood pressure in the aorta. Is this really true?

If labor begins and the uterus as well as the muscular parieties of the abdomen contract, the blood must to some degree be carried from these to other portions of the body. The blood pressure must always then be greatest in the aorta, since the cardiac contractions expend their energy directly upon the blood stream within the aorta; the blood pressure in other parts of the body must decrease in proportion to the distance from the heart. During the birth pangs, as well as during other moments of impediment to the free passage of blood through various parts of the body, there must plainly be an increased arterial blood pressure; after the cessation of the labor pains, however, the increased pressure must immediately cease.

If, then, the birth act is completed, there occur permanent changes in the circulatory conditions, the great vacuum left in the uterus by the birth of the foetus becomes at once somewhat smaller, in part through the atmospheric pressure from without, partly through a mechanical contraction of the uterus brought about by the elasticity of the uterine tissues; as far as permitted by the placenta and remaining placental fluids and blood, the space becomes filled with atmospheric air. The capillary network of the foetal placenta is in this way early subjected to a certain pressure, which also contributes to the prevention of a profuse hæmorrhage from the thin walled capillary vessels here and there ruptured during the birth throes. Shortly after birth the after pains also

* *Tidsskrift for Veterinärer*, I. R. Bd. 18, S. 382.

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supervene, the physiological contraction of the uterus, which as is well known are dependent upon the vigor of the animal and other conditions, and may therefore be more or less powerful. The capillary network shrinks with the maternal placenta and the womb can consequently not take up the same quantity of blood as during the time of advanced pregnancy.

If now there was no other place for this excess of blood from the uterus, then the arterial blood pressure would become notably stronger immediately after birth, and according to Franck's hypothesis this would especially be seen in those cases where the uterine contractions are very vigorous.

But already some time prior to birth, in the last period of pregnancy, there occurs a gradually increasing swelling of the udder and thereby an increased flow of blood to it. This is in consequence of increased functional activity in the organ. After parturition, the increased vascularity of the gland is further stimulated by the sucking of the calf and by milking, consequently mechanical causes also exert an influence upon the vascular activity and contribute to the increase of the milk secretion. This begins, it is true, almost always prior to parturition, but only to a small degree in comparison with the secretion after calving; for after parturition there can be more milk withdrawn several times daily than the quantity which the mammæ have secreted in several days before birth.

It is therefore very doubtful if the augmented blood supply required by the udder after birth, is materially less than that quantity of blood which the uterus demanded during the later stages of pregnancy. A direct measure and a direct comparison are not readily attainable; for this purpose one needs know the volume of the blood stream which goes to the uterus and to the udder before and after parturition; but indirectly we may arrive at a trustworthy conclusion, since the nutrition of the foetus and the secretion of milk each draws its material from the blood, in turn the blood secures its nutritive elements from the alimentary tract—that is, from the ingested food.

As the nutrition of the foetus and the production of milk each draws its nutriment from the blood, so the blood in turn secures its nutritive elements from the digestive organs, or rather from the food elements ingested by the mother. The nutritive elements in the food give, therefore, a standard of measurement of what can be drawn from the blood, as well in pregnancy as during lactation.

If now we inquire, if the pregnant cow requires more or less food than the fresh milk cow, which under our present state of development must produce economically a sufficient quantity of milk, each agriculturist can say to us that the former requires less.

It follows then that not so much is withdrawn from the blood on account of the nutrition and growth of the foetus as during lactation in the first period after birth. It is also readily understood that the calf, after birth, through its increase in weight, and its movements, gradually fixes greater nutritive demands upon the mother than the foetus did just prior to birth. The activity of the udder is, however, clearly more than sufficient to meet this additional demand. There must consequently be more nutritive material excreted in the milk, in a different form and of different composition, of course, than the calf used in the foetal period, and since the activity of the udder is naturally a continuation of the uterine function, one is warranted in drawing the conclusion that this functional activity of the udder is proof of its vascular activity as well, and that therefore a greater blood flow goes to the udder after birth than to the womb before.

The heavy demand made upon the blood by the abruptly increased lactation after birth must inevitably result in a much greater blood flow to the udder, after, than before birth, and always the greater the more important the milk secretion is, hence the greatest in good milk cows. Even if it follows, should we adhere to Franck's conclusion, that the blood pressure increases after birth in the aorta and thence to the peripheral parts of the body, this pressure must, however, be smallest where the blood stream finds an overflow in the udder, that is, in good milk cows, which also are the ones, according to Franck, most frequently stricken. Even if there can be nothing more interposed against the theory of an increased blood pressure in the aorta as a connecting link between a too abrupt contraction of the uterus and the cerebral anæmia, these considerations alone should carry sufficient weight to render the Franck hypothesis untenable.

It is a peculiar circumstance which may well contribute to the doubtfulness of the correctness of the hypothesis that even those practitioners who are committed to the theory that an excessive aortic blood pressure exists, yet in handling the affection rely chiefly upon those remedies which elevate the arterial blood pressure. Also they are almost as united in their exclusion of phlebotomy, which in all cases reduces the arterial blood pressure for a short time—according to Albu,* for one-half to four hours.

It is therefore improbable that vascular disturbances constitute the active cause of parturient apoplexy. If, however, the parturient paresis is once established, then it constantly plays an important rôle in the course of the affection and the pressure

* *Berl. Klin. Wochenschrift.* 1896, Nr. 43.

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of the arterial blood stream is then undoubtedly changed. *It is not, however, increased, but on the contrary becomes markedly lessened.* But the etiology is quite otherwise than the circulatory changes which accompany parturition. The cause is in part a paralysis of the cardiac muscular tissue. The chief symptom of the malady is paralysis. In extreme grades of the disease, the heart often becomes paralyzed to such a degree that its impulse against the chest walls can scarcely be recognized at all. In consequence of the depressed cardiac action and the diminished arterial blood pressure, cerebral anæmia very naturally supervenes because the blood stream for the reasons named becomes slower, especially at the peripheral parts.

The enfeebled condition of the heart and the depressed arterial blood pressure explains also the fact that the peripheral parts, especially the horns, ears and legs, as well as the body surface, is frequently found to be very cold. At times the epidermis is even shriveled. The fæces in the posterior part of the rectum are often desiccated, the œdema which exists in the udder vanishes rapidly. Some fatal endings have been noted immediately after phlebotomy. In many cases albuminuria exists. There might occur here the apparent possibility of attributing the desiccation of the peripheral parts of the body as well as the posterior part of the rectum rather to a failure of the secretion of moisture than of the absorption of it.

When, however, it so frequently occurs after an attack of milk fever that fæces of the normal consistence and humidity are found at a distance of about two feet forward within the rectum, and in the hinder parts of which only dry balls and frequently only dry crusts exist, which adhere to the mucous membrane, so one must come to the conclusion that just prior to their passage into the most posterior part of the rectum the dry pellets and incrustations were normal in consistence and moisture, but became dried up through the absorption of moisture.

It has been time and again noted by various observers* that a mammary œdema very evident at the beginning of

* Miekdahl; *Tidsskrift for Veterinärer*. Bd. 21 S, 288.

milk fever, quickly vanishes; since then no evidence can be adduced of deficient secretion in such cases, but only of diminished blood pressure and an increased absorption, the force of the belief is much strengthened that it is also an increased absorption, which is so much in evidence in the rectum in calving-fever.

In addition to this it is noted in various other affections that resorption occurs in the peripheral parts of the body concomitantly with cardiac depression and lowered arterial blood pressure. For example, in the petechial fever of horses (*purpura hæmorrhagica*) as is well known there frequently occur enormous oedematous swellings in various parts prior to necrotic sloughing and now and then death ensues ere this stage is reached. Also the limbs can be very greatly swollen in such cases and it is observed at times, if the malady is sufficiently advanced that the muscular power of the heart is markedly depressed, the oedema of the legs suddenly vanishes, in fact to such a degree that they have some hours prior to death resumed their normal volume.

In heifers mammary oedema is met with toward the end of pregnancy and sometimes after calving in a far higher degree than is common in fully developed cows. The arterial ramifications of the udder in primipara are not so developed and dilated that the blood can find at all so easy a passage as in cows and the passive blood pressure is necessarily greater. It therefore follows that the blood stream, which flows through the udder immediately prior to and succeeding calving, cannot be so great in these primipara as if the mammæ were not enlarged by the oedematous swelling.

There remains, consequently, a relatively great amount of blood which had occupied the uterine vessels during pregnancy, which can be disposed of to other parts of the body, especially to the brain. *And yet this causes no part is in primipara.* The tissues of the primiparæ are also, in the brain as well as other parts, more elastic than in older cows; since, however, the disease admittedly appears most frequently at the period of greatest vigor, this elasticity can play no part in this case or the disease would occur most frequently in aged cows.

That the disease should largely first appear two to three

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days subsequent to birth or even later also fails to indicate as the cause a precipitous contraction of the uterus and the consequent interference with cerebral circulation, and brain-anæmia.

After the foregoing considerations, it may well be doubted if during the development of calf-fever cerebral œdema exists. For the symptoms indicate on the contrary an absorption of fluids from the tissues and that the brain would form an exception or rather a reverse condition and should become œdematous, while the tissues in other peripheral parts become anhydrous, is improbable. Neither can this have its cause in the softness of the cerebral tissue nor in the division of the arteries into an arterial plexus in ruminants, as Franck has sought to prove.

The hypothesis of intoxication from decomposition of uterine secretions appears at first thought, on the contrary, to be more probable than the Franck theory. It must be granted that the womb presents favorable conditions for the development of toxic substances after birth. Nor can one interpose with certainty any objections to such poisoning as the cause, based upon the symptoms of parturient collapse.

The toxæmia hypothesis has indeed found more and more adherents among veterinarians, especially since Schmidt-Mülheim* has directed attention to it, and pointed out the notable resemblance between the symptoms of the calving-fever of cows and the ptomaine poisoning of man. The ptomaine poisoning hypothesis, with the uterus as the fountain head of the toxine has, however, as its foundation the same presumption as the hypothesis of Franck, namely, a too rapid contraction of the uterus. That is, it is claimed that the ptomaine-like substance can not develop in the presence of air. That such an abrupt contraction of the uterus does not occur, as a rule, I have already tried to demonstrate. Not only is the presumption untenable, but there are numerous other circumstances which argue against the uterus as the point of origin of the disease.

* *Deutsche Zeitschrift f. Thiermedizin u. vergl. Pathologie*, Bd. II, S. 72, und *Handbuch der Fleischkunde*, S. 230-234.

(To be continued.)

MILK AND MEAT INSPECTION.

BY WM. H. GRIBBLE, D. V. S., ELYRIA, OHIO.

A Paper read before the Joint Meeting of the Ohio and Michigan Veterinary Medical Associations, July 12, 1898.

Mr. President and Gentlemen:—The topic we have chosen, "Meat and Milk Inspection," is a subject of great importance to the people, as to consumers of these articles, and to us, as veterinarians, students of practical sanitary science.

Meat and milk are articles of probably greater consumption, wherein man's cupidity needs overlooking, than any other article of food. True, bread and groceries may be adulterated with substances detrimental to health; yet our State pure food laws exercise a salutary effect upon this. Moreover, the consumption of these articles, with the possible exception of bread, is in no way to be compared with the quantity of meat and milk used.

We do not propose to take your time in undertaking to give our views as to the proper color and consistency of meat and milk or to propound our views as to what constitutes good meat and milk or bad meat and milk, but simply to give you some personal, practical illustrations as to the *quality* of material we are compelled to consume, in cities and towns where there is no inspector, or where the laws providing for them are not enforced.

This subject is important not only from a sanitary point of view, but also from a stomach feeling (pardon the term) standpoint as well, for we all know that while some meat or milk might be used with impunity and might not be detrimental to health in any way, there might have been some facts connected with these things, which, if known to the consumer, would not have been used. His stomach would have rebelled and failed to entertain the unwelcome guest.

We doubt if there is a man who denies the importance of meat and milk inspection. The Scriptures tell us that this was recognized in early history, the flesh killed for food by the Jews being regularly inspected by the priest; so, if important then,

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how much more so now, when the enormous quantities of flesh and milk consumed for food and which are constantly increasing, make the quality and sanitary condition of these articles of the greatest importance to public health.

While most of our larger cities by municipal enactment have appointed inspectors and adopted a series of rules and regulations respecting food inspection, the use of the word "may" in section 31, laws of the Board of Health (when referring to the appointment of inspectors) operates so as to practically leave outside the pale of the law, as regards their meat and milk inspection, all our towns and smaller cities, for, on the plea of economy, either no inspector is appointed at all or else one who has little knowledge fitting him for the duties he may be called upon to perform.

Some boards of health even refuse to appoint an inspector, claiming that none is needed in their city; the board seemingly being entirely ignorant of the traffic in diseased meat.

An inspector should be a qualified veterinarian whenever it is possible to obtain one, because he has been especially educated as to the pathological changes and conditions of animals used for food; their diseases that are communicable to the human family; as well as the natural condition of the healthy carcass at post-mortem.

Fellow-practitioners, we do not believe that our profession will be recognized in this until our law-makers give us legislation looking toward the compulsory inspection of all meat and milk producing animals, and by State law, we, as veterinarians, are recognized upon all boards of health, wherever possible, on an equality with the medical profession.

True, section 3 of the law governing the practice of veterinary medicine and surgery in this State gives us some recognition in qualifying that only such veterinarians as have passed the State examination or have been in continuous practice five years, and no others, shall be employed by the State Board of Agriculture, State Live Stock Commissioner and State Board of Health.

This is good so far as it goes, but it does not go far enough, for section 9, Ohio Board of Health laws, practically compels all boards of health to contain two practicing physicians (M. D.'s), the veterinary surgeon not being recognized at all, and of the other appointed members of these boards, what a rarity to see a veterinarian ever appointed, while farmers, merchants and even day laborers, with little or no knowledge of sanitary measures, are seemingly well qualified for the positions. For this we are largely to blame ourselves; we have not been educators. While most people know that domestic animals are subject to pleurisy, pneumonia, lock-jaw, etc., etc., there are many, many persons who do not know that these animals are liable to dyspepsia, asthma, heart disease, apoplexy, fits, spotted, scarlet and typhoid fevers, consumption, diphtheria, tooth-ache, ear-ache, cancer and even boils; in fact, almost every disease that human flesh is heir to (the name in some cases being changed a little). Apart from this lack of knowledge people fail to appreciate the educational ability of the veterinarian. Then, again, there are too many practicing medicine, who make it a specialty to "doctor" the paymaster instead of the patient; or, as it is often expressed, "working him for a good bill."

This is nearly always disclosed; and when it is, it reflects to the discredit, not only of the individual practitioner, but of the whole profession at large.

In a large number of our towns and smaller cities, the appointing power of the boards of health still look upon the present veterinarian as "the old horse doctor," and this is not to be wondered at, when a large majority of our sister profession (the medical fraternity) look upon us as considerably beneath them in learning, in scientific training and in the knowledge of practical sanitary science. Why they do this I cannot say, for they should be the last to so judge us. One profession is at least the peer of the other; in fact, does it not require a longer course of study to correctly diagnose disease by eye and ear, as the veterinarian must do, than where questions can be

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asked and answered? And none will deny that on starting towards the goal of their respective professions one is as well educated as the other. While the great majority of physicians obtain their diplomas upon an attendance of two sessions at college, nearly all veterinary colleges demand, and compel, the students' attendance at three or more sessions, and each of these sessions as long, or longer, than the sessions of medical colleges. More than that, a part of the veterinarian's education is from the standpoint of comparative medicine, in the study of those diseases of man and animals which are communicable one to the other; and their effect upon the public health.

Take tuberculosis (consumption); that disease so widely disseminated that probably no part of our country is free from it; and which affects nearly all warm-blooded animals, more particularly cattle and the human family. This disease until recently was classed as hereditary, but it is now proven by the best of authority to be not hereditary at all, but a purely contagious disease due wholly to the bacilli tuberculosis, discovered by Prof. Koch.

You cannot have consumption without tubercule bacilli, and they are taken into the system by the lungs through respiration, into the stomach with food and by actual inoculation; they are given off from consumptive patients through the mouth, nose, bowels, vagina and milk. Infection through the air, breathing dust containing bacilli, is the most serious to deal with, while infection, from cow to man through the milk, is particularly dangerous, especially when the udder itself is affected.

Consumption causes one-fifth of the entire death rate of the civilized human family, and while statistics are not obtainable, the claim is made in some cases that 50 per cent. of our mature milch cows are affected with the disease in some form. Yet how many physicians study this one disease from the standpoint of comparative medicine, and would think of looking in the barn or the public dairy for the cause of infection of their

consumptive patient? This is exactly what is done by the veterinarian at all times ; he studies the relation of animal diseases to the public health.

These facts of themselves should be sufficient to grant veterinarians equal recognition with physicians on boards of health so that both could work in harmony, could work together for the lessening of the human death rate.

We believe that there is an immense traffic in diseased meat (dead and alive), for in nearly every city or town there is to be found butchers well versed in every known method of concealing diseased meat and selling it as sound, and who are willing, yea, anxious, to buy such carcasses and animals as would not be financially prudent for them to have their patrons see, especially previous to slaughter.

The risk is taken in consideration of the greater profits and is of course to be found far more frequently in our towns and smaller cities, where no attempt is made at inspection, and where private slaughter houses are used and pigs kept at these houses to remove the offal. A diseased animal may be butchered at night or in the privacy of the slaughter house, the diseased portions being destroyed. Then who is wise enough or unwise enough to tell the story?

That such things are done in all parts of the State we have no doubt, for the city in which we live, a city of seven thousand inhabitants, contains no worse citizens than other cities, and we personally know of such things being done there and done purposely.

We were called to see a cow (thin in flesh ; had calved two weeks previous) which had fallen in the road, rupturing a blood vessel of the brain. Treatment was of no avail. Some time the next day, the cow lying flat on her side, but not quite dead, a butcher of our city came along and purchased her for \$1. He carefully bled the animal, loaded her into his wagon and took her to the slaughter house, to be fed (he said) to the pigs, but a careful examination of that pig pen failed to show any of the bones, so we suppose the pigs ate them, too. More-

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over, it would be foolish to bleed a cow to death for pig feed, when pigs are very fond of blood.

We were called to see a Jersey heifer, suffering from tubercular dysentery, where treatment did no good. She was sold to a butcher for \$2 for pig feed, but a quiet examination of that pig pen a few days later failed to show any bones; pigs had eaten them also, I suppose.

A farmer living a mile or two from our city has a slaughter house on his farm. He was awakened one night by one of our butchers and asked for the use of this house as the steer they were driving was so fat and tired they could not get it farther.

Next morning the farmer went to see if the butcher had cleaned up the slaughter house, and there was the head of the worst case of big jaw we ever saw in our life; several discharging sores, the teeth had fallen out; and plainly showed that the animal was really very fat, at least about the head, but probably was so poor in the body that it was truly tired.

One of our butchers killed a cow heavy in calf; the calf would probably have been born in a few days. The meat of that cow was sold, as was the calf dressed for veal, and when we spoke about this latter the man seemed surprised and informed me that they always did this, when the calf was advanced far enough.

We could give you records of cases of cows having cancer, erysipelas, broken legs, and we don't know what else, all of which were undoubtedly sold over the counter as first-class meat, but so butchered and managed that it would be almost impossible to obtain a conviction, unless one personally went to considerable expense to hire a private watchman or a detective.

One of the dairies that furnished our city with its milk supply had several cases of consumption among its cattle; the main bull of the herd dying with this disease, while tubercular mammitis was very common. Still this milk brought the highest market price; and we must confess that the dairy itself was a model of cleanliness.

Now, we cannot say that all these cases would be detrimental

to health, in the quantities usually eaten, in fact, the preponderance of evidence is that they were not, but that is not the question. Is it right, is it just, when, having sufficient confidence in a butcher to purchase our meat supply of him, supposing we are getting good, wholesome, first-class meat, that we should be furnished with sick and diseased stuff, which, if we had seen previous to slaughter, nothing could have tempted us to eat of it?

We have no objection to such meat being sold for just what it is, and let those who are willing to buy it do so, but when man's cupidity will allow him to lower himself so low that for dollars and cents he is willing to so trifle with our stomachs, it is time that we used our best endeavors to secure a law whereby such things would be reduced to the lowest minimum of possibility.

BONE SPAVIN.

BY F. HARVEY, M. D., D. V. S., BALTIMORE, MD.

In suggesting the following treatment for bone spavin I am aware that it is one which could not be carried out in all cases, but still, by the expenditure of a certain amount of diligence and care, there are not many cases to which the treatment could not be applied. For those veterinarians who have hospitals and all conveniences, I believe it to be an ideal treatment. I have only treated one case of this kind, but that was a success, and I hope that I may hear in the future that others have treated cases with success. Perhaps the success in my case was not due to any particular form of treatment, and for that reason I am anxious to hear if others have used a similar treatment, or if so, what results they obtained.

I am aware that I am suggesting nothing new to the profession as far as the general principle of the treatment is concerned, but only wish to call attention to its application in this particular disease.

The first steps in treatment are similar to those usually

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adopted, viz. : the application of an ointment of biniodide of mercury (1 to 8), and attention to the hock until all swelling and fever have disappeared. The next step is the application of a plaster of Paris bandage to the hock, in such a manner that complete rest is obtained for the joint. Now the application of the bandage requires patience, and some skill.

In the first place it is necessary to keep the hock motionless, while the plaster is being applied, and until it has thoroughly set. This can be accomplished by holding up one foreleg, for a short time, but of course not long enough for the bandage to be applied and for it to set. This trouble is overcome by placing the horse temporarily in a sling, and having the foreleg held up. The bandage can then be thoroughly applied. In applying the bandage the leg must be in a natural position, not too much extended, or flexed (if anything slightly in extension). Great care must be taken to avoid bandaging too tightly; it must be borne in mind that in setting the plaster contracts, and if after the bandage has been applied any swelling of the limb should be noticed, the bandage should be immediately removed, and reapplied.

Now that the plaster is applied, something must be done to keep the animal from flexing the limb. To prevent this I apply a small padded block (such as is used to keep a patella from being re-dislocated), placed in the hollow behind the pastern, and strapped around the pastern. It must fit closely and comfortably, resting on the lateral cartilages below, and reaching up to the under part of the fetlock joint.

We have now obtained what we desired, viz. : perfect rest for the joint; no friction. The after treatment consists in keeping the animal in as confined a position as possible, and although I did not do so in my case, I suggest that the animal be kept in slings just as long as is possible.

How long should the bandage be kept on?

As long as possible within a period of two months; it may be necessary to reapply.

If the animal is kept in slings the limb may be kept

slightly in extension by using a cord fastened to a strap, around the fetlock, and carried forward between the forelegs, and fastened to a collar around the neck. When the plaster is removed, do not give the animal too much freedom for a month; after that it is well to turn him out in pasture for a month or so when possible.

Now I know that there will probably be many objections raised to this treatment, and at first sight it does look as though it were an easier treatment to read about than to apply, but I can assure my professional brethren that, with patience and care, they will find that the treatment can be applied successfully.

To those not familiar with the way of applying a plaster bandage, it may prove a little troublesome at first, but practice will overcome this.

I do not wish to be understood as criticising anyone's ability as to applying a plaster bandage, but many, I am sure, will bear me out, that it is quite an art, and requires considerable practice.

I first conceived the idea of treating a spavined hock in the above way when I was treating some cases of inflammatory rheumatism in human beings; I found that those joints to which plaster casts were applied did well, and seldom became ankylosed.

VETERINARY MEDICINE IN RUSSIA.

EXTRACTS FROM A PAPER BY DR. JEAN KOWALEWSKI.

* * * * *

4. VETERINARY ORGANIZATION IN CITIES.

This is dependent upon the mayor's office of the cities and of the governments of districts. It is defective, except in such capital towns as St. Petersburg, Moscow, Varsovia, Kieff, Odessa, and Wilna. The city representatives are mostly simple merchants or workmen, whose intellect and civilization are limited. Though wealthy, these men object to all kinds of improvements,

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such as central slaughter houses and markets, inspections of meats, microscopic laboratories, etc.

Notwithstanding their great power, governors cannot oblige the representatives to vote large amounts of money for the establishment of abattoirs, of analytic laboratories and of the veterinary personnel; and on that account the sanitary veterinary service is imperfect and in many places exists only in name.

In most of the large cities, this service is represented by one or two veterinarians, one filling the duties of inspector of the abattoirs, the other of sanitary veterinarian. Many cities have no special sanitary veterinary surgeons; in those cases, there are special appointments made by the mayors. At St. Petersburg, Moscow, Kieff, Odessa and Varsovia, there are two kinds of sanitary veterinarians: (1) the inspectors of abattoirs, and (2) the sanitary veterinarian proper. In St. Petersburg and Moscow these are called "police veterinarians." Sanitary veterinarians receive from 2400 to 8000 francs a year (\$500 to \$1600.) The best organization is in Moscow, where the personnel of the central abattoirs counts 10 veterinarians, one of whom is chief. The abattoir at Moscow cost 8,000,000 francs (\$1,600,000); it possesses a handsome laboratory of bacteriology, a rich microscope cabinet for researches of trichina, etc., a pathologico-anatomic museum and special room for autopsies.

At St. Petersburg the service is less important; there are only four veterinarians attached to it. Wilna has only one, Mr. Novievitch, well known as a microscopist and a bacteriologist.

In most Russian cities there is no sanitary inspection of milk or dairies. Inspection of meat is very incomplete.

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5. MILITARY VETERINARIANS.

This organization is still imperfect. Military veterinary surgeons are still under the orders of inspectors of medicine and chief physicians of regiments.

Central Organization.—The great chief veterinarian of the

army is the principal inspector of medicine of the army. Under his orders are all physicians, veterinarians and druggists. In the military medical bureau at St. Petersburg, for the past two years, there has been a veterinary section, with one chief and two chief assistants—three veterinarians. In each military district, the chief of the veterinarians is military medical inspector; he has under him a chief veterinarian whose duties and power are very limited, as he is more a clerk than a veterinarian. In each regiment of cavalry and each brigade of artillery, there is one veterinarian, who has several assistant veterinarians (sous-officiers). The salaries of army veterinarians vary between 2800, 3500 and 4000 francs (\$560, \$700, \$800) a year, according to length of service. Every five years (the first one does not count) additions are made to the regular appointment, the first time *one-quarter* of his annual earnings; the second (15 years) *one-half*; the third (20 years' duty), *three-quarters* of his salary.

Army veterinarians, beside their special duties, have to teach in the schools of assistant surgeons. The students of these schools have to follow a programme for three years of elementary veterinary medicine and to pass an examination before a special board of veterinarians.

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8. VETERINARY EDUCATION (VETERINARY INSTITUTES AND SCHOOLS).

The following cities have veterinary institutes: Kharkoff, Kazan, Jourieff, Dorpat, Varsovia. The oldest is that of Kharkoff, founded under the name of "Ecole Vétérinaire Pratique," in 1839 and reorganized in 1873. Between these institutes, which have all the rights of faculties of universities, there are several elementary schools, for *assistant veterinary surgeons*: Kharkoff, Kazan, Jourieff, Tomsk, Tobolsk, Norvotschukassk, etc. At St. Petersburg, until 1880, there was a veterinary section (a faculty) at the Military Academy of Medicine, which was founded in 1808. All the veterinary institutes are attached to the Minister of Instruction, the director and professors are named by the Secretary. Students are selected

from young men who have finished their course of studies in technical schools, classical gymnasiums; the first have to pass an examination in Latin.

The course of studies lasts four years; after which those who have passed a successful examination receive their diploma of "veterinarian," which gives them the rank of sub-lieutenant in the army, after four years' service.

The veterinary schools of Kharkoff, Kazan and Jourieff are under the orders of directors from the veterinary institute; the duration of the course is five years and those who have finished it have the title of assistant veterinary surgeons; they may practice, under the survey of the veterinarians.

The largest and best organized institute is that of Kharkoff. The director is Professor Rajewsky. There are three ordinary professors, five adjuncts and five assistants. Natural sciences, hygiene and physiology are taught by professors from the faculty of medicine.

The institute occupies several buildings; a large clinic hospital for 50 patients, a chemical laboratory, amphitheatre of zoötechny, laboratory of bacteriology, a service of vaccine, a riding school, operating halls, hospital for dogs. A farm for zoötechny is wanted. The smallest of the institutes is that of Varsovia, whose faculty has eight professors. Dorpat furnishes the best practitioners, thanks to Prof. Putmann, who occupies the chair of practical operative surgery.

A young graduate from an institute is quite well posted, scientifically speaking; knowing well the microscope, bacteriology, chemical analysis, etc., he is deficient in severe cases of epizootics or of complicated affections where a rapid diagnosis is so essential.

The salaries of professors in the institute are 10,000 francs (\$2000), that of adjuncts 4800 francs (\$960.)

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10. VETERINARY SOCIETIES.

In Russia, there are eight veterinary societies:

(1) *At St. Petersburg.*—Society of Veterinary Physicians;

President, Mr. Woronzoff, Doctor of Veterinary Medicine, Professor of the Military Academy of Medicine; Mr. Peschtsitsch, Vice-President, veterinarian; Secretary, Sokoloff, Doctor of Veterinary Medicine. (This is the oldest society.)

(2) *At Moscow*.—Society of Practicing Veterinary Doctors; President, Mr. Roganoff; Secretary, Mr. Pourmè.

(3) *At Varsovia*.—Society of Military Veterinarians.

(4) *At Odessa*.—Veterinary Society.

(5) (6) (7) *At Konsk, Orol, Kharkoff*.—Veterinary Societies.

(8) That of *Kazane*.

12. PRIVATE PRACTICE.

Through a section of the Russian statutes, Russians and foreigners who have no diplomas, certificates or degrees of veterinarian have no right to practice, yet there is no part of the globe where empiricism is so extended. Gelders and many others injure horses and cattle and are free agents for propagation of anthrax and other epizootics. Judges and courts of law are very lenient toward empirics.

In large cities, veterinarians may obtain good practice and earn from 6000 to 30,000 francs a year (\$1000 to \$6000).

In other towns, veterinarians earn little and could not live without fixed governmental salary; these benefits vary between 1000 and 4000 francs (\$200 to \$800).

Russia is yet a "terra nuova," where veterinary medicine needs all the efforts of veterinarians to raise it to a respectable, material, but far from comfortable, position.—(*Presse Vétérinaire*.)

MARYLAND BOARD OF VETERINARY EXAMINERS.—The following appointments have been made by the Governor to constitute the State Board of Veterinary Medical Examiners: Drs. A. W. Clement, W. H. Martenet, and H. A. Meisner, of Baltimore; F. H. Mackie, of Fair Hill, and R. V. Smith, of Frederick City.

J. A. HUHNE, D. V. S., of Kingston, N. Y., graduate of A. V. C., '89, is now in Hawaii as lieutenant of Co. M. from Kingston.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

LARYNGOTOMY—ARYTENECTOMY FOR ROARING IN THE HORSE.*

By Dr. J. H. BLATTENBURG, Lima, Ohio.

Early in February a gentleman brought to me a black gelding hitched to a milk wagon. The horse was twelve years old, weighing about 1000 pounds, had at one time been driven in a few races, but in the last two or three years had done nothing but slow work, owing to the condition of being a roarer, and so bad that in a half-mile trot to the wagon he would be compelled to stop and walk from dyspnoea.

I acquainted the owner with the existing conditions; also the successful and unsuccessful results of an operation (from the varied experiences of those who had been performing the operation of removing the arytenoid cartilage), and said that, providing he was willing to take the chances of unfavorable results, I would operate upon the horse.

On February 16 the horse was returned for operation. I proceeded by clipping the hair around where I desired to operate, covering the larynx and trachea; then hobbled, cast, and secured him; administered anæsthetic of A-C-E mixture. When fully anæsthetized placed animal as near as possible upon his back, cleansing space antiseptically, then making an incision through skin and muscles in median line from thyroid cartilage to fourth ring of trachea, with little hæmorrhage save a couple of small arterial branches. The second incision was through the first four rings of the trachea, crico-tracheal ligament, cricoid cartilage, and crico-thyroidean ligament to body of thyroid cartilage, care being taken not to injure the vocal cords. Not being in possession of a tampon canula, I substituted an ordinary trachea tube, placed it in the trachea and packed around it inside the trachea with gauze, holding tube in position with string tied around the neck.

In viewing the inside of the larynx, it was easy to determine which of the arytenoids was affected; the left one did not move at all, while the right one moved freely by the ac-

* Read before the joint meeting of the Ohio and Michigan Veterinary Medical Associations at Toledo, Ohio, July 11 and 12, 1898.

tion of the muscles which governed it. Having at hand a half dozen small sponges and a long pair of forceps in the hand of an assistant, I proceeded as follows: Incising with a scalpel the mucous membrane along the superior and posterior edges of the affected arytenoid; then with a long pair of curved scissors cut through the vocal cord at its insertion on the cartilage and the mucous membrane along the lower edge, also muscular fibres of the crico-arytenoidean and thyro-arytenoidean, then the mucous membrane along the anterior edge, destroying as little mucous membrane as possible by cutting as close to the cartilage as can be done. The arytenoid was then lifted with a pair of forceps and cut away near its articulation with the cricoid cartilage with a probe-pointed bistoury, requiring some little force and a saw-like motion. Möller and Cadiot speak of an ossification having often taken place at this point in old subjects, but such was not the case here. The cartilage was removed and the wound sponged free from blood; the anterior and posterior edges of the wound were drawn together by three catgut sutures, this requiring a well-bent needle and needle-holder. After having removed all blood-clots from larynx, I packed it with antiseptic gauze, tied so as not to be worked around into the œsophagus. The packing around the tube was removed, and the horse, as soon as able, allowed to rise, was placed in a box stall without food or bedding, but having access to a bucket of water placed upon the floor. Next day packing in larynx was removed and larynx cleansed with damp sponges; tube cleaned and returned into trachea; damp oats was allowed and fed from the floor; small quantity of hay also. In five or six days horse was able to breathe through larynx and the large incision was being left open, the tube left out of the trachea.

In a few days the horse was sent home and orders to feed and water only from the floor.

He gradually grew better, till at the end of two weeks he would emit no sound at all when chased into a brisk trot. In ten or twelve weeks he began to roar again, even worse than previous to the operation. I then concluded that this case was going to be one of those of which it is oft reported, that "the operation was a success, but the patient succumbed," but in the course of a few weeks the roaring gradually lessened, and in the last five or six weeks the horse has been jogging to town every day drawing a milk wagon, and to all appearances and reports from owner is as sound as ever.

REMOVAL OF CYSTIC CALCULI FROM GELDING AND MARE.

By E. M. NIGHBERT, V. S., Mt Sterling, Ill.

CASE NO. I.—Draft horse in good condition, and worked regularly, was found to be in much distress and pain. I was consulted, and having other urgent calls to attend to diagnosed the case colic and prescribed the usual remedies, not seeing the case. On my return an urgent call was awaiting me, as the horse was much worse.

The following symptoms were presented: Perspiring profusely, quick and heavy breathing, anxious expression, pulse and temperature greatly elevated. He would back his rump against the wall and get his abdomen over a corner of the

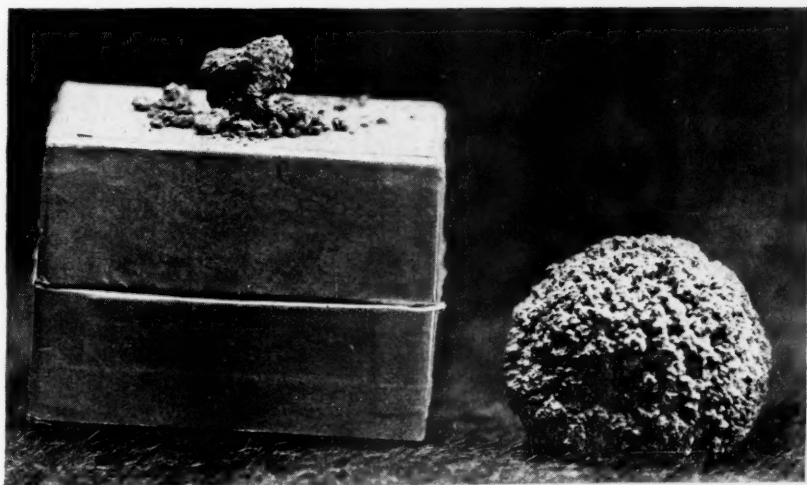


FIG. 1.

FIG. 2.

manger; in fact, would get in almost any shape to obtain relief—all symptoms of great pain and anxiety were present. I examined the patient thoroughly, and in the perineal region, just at the ischial arch, I found an enlargement about the size of a hickory nut. I passed a metallic catheter and the enlargement proved to be a calculus. I was unable to move it either way, as it was imbedded in the mucous membrane of the urethra. An operation was the only means of relief. I placed a twitch on the nose, cocained the parts, and did the operation standing. I made an incision over the object of fair length through the common integument, and as small an opening through the accelerator muscle and mucous membrane of the

urethra as practical and crushed the stone and removed it. The above (Fig. No. 1) is the exact size and condition of the stone after removal.

Treatment.—Washed out bladder with tepid water and boric acid, with tincture opii; stitched wound and dressed it antiseptically. There was no trouble in the escaping of urine and in ten days wound was entirely healed, and the horse put to work.

CASE NO. II.—Road mare, weight 1050 lbs., spirited and a good driver. Had been noticed for about a year to have painful and frequent micturation. The urine was noticed to be tinged with blood and at this time I was consulted.

She had undergone various treatments by several "hoss doctors" for various ailments, but all proved of no avail. She was in fair condition, appetite good, nervous and excitable. When stopped after being exercised would attempt to micturate, showing pain, which would soon wear off and return after being exercised the same as before. Made a vaginal examination and detected object in bladder. I then placed my middle finger on the floor of the vagina and passed it through the meatus urinarius into the bladder, and by contraction of the bladder the stone was thrown against my finger. I was then safe in saying it was a cystic calculus. I then proceeded to remove it, the mare twitched and standing. Having no lithotomy forceps or instruments of that kind at the time, I proceeded as follows: I pushed my finger well into the bladder, pressing the stone against its walls and by gentle traction I was able to pass the stone through the meatus without injury. I then washed out the bladder with tepid water, boric acid and tincture opii, and did nothing more. The mare did well and has not been bothered since. The above (Fig. No. 2) is about the exact size and appearance. Observe the roughness which caused the extensive irritation of the bladder.

I report the first case to show that we should always make a thorough and careful examination, even in apparent simple cases.

I report the second to show that by patience and time we can accomplish much to our credit and relief to our patients.

CÆSARIAN SECTION IN THE BITCH.

By FRANCIS ABELE, Quincy, Mass.

In the May REVIEW I see a case of Cæsarian section recorded, the dam (a cow) being destroyed. I have never had to treat a cow that way, but I was called to a valuable Boston terrier

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bitch of about 12 pounds which had accidentally been mated to a Boston terrier of about 25 pounds. I found her straining to expel a large pup, breech presentation. I seized the pup by the hind legs and by traction removed him, after pulling him pretty well to pieces. The hips bound, then the abdomen bound and then the shoulder bound, so it seemed he could not come. I left her then to deliver the others if she could. Called ten hours later, but she had none started, so I used forceps, crushed the forward pup, and tried to draw him out, but it was impossible, so I gave her ether, slit the abdomen along the linea alba, drew out uterus, slit the superior surface, removed crushed pup, then another. My assistant performed artificial respiration, etc., and brought her (the pup) to life, while I swabbed the uterus with cotton, sewed it with gut, stitched the peritoneum and later the skin. Bitch did well, pup lived two weeks. Mother's milk dried up, no foster mother was procured, as pup was not wanted. Mother is still alive and doing well; was in heat a few weeks ago.

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

TETANUS IN THE COW FOLLOWING CALVING [*By Mr. H. B. Eve*].—Though lockjaw is not an uncommon disease in cattle, where all the various forms have been described by the various authors on cattle pathology, its mention as a complication of calving is rather unusual, and on that account the case related by the author is interesting. The case was that of a cow which had calved some days previous and was found presenting symptoms of tetanus—head raised, neck stretched out, nose protruding, nostrils dilated, tail elevated, stiff gait, jaws partly locked, muscles of the neck and loins rigid, membrana nictitans protruding over the eyes, nervous paroxysm on the least noise; pulse quick, wiry, temperature 103° . The treatment consisted in removing the animal into a dark loose box, plugging the ears with cotton, enforced quietness and seclusion, fresh sheep skin over the loins, gruel and mash; a pound of sulphate of magnesia, with two drachms of prussic acid in gruel twice a day, washing of the uterus with a solution of boric acid (1:25). Two days after the cow was found unable to rise and died during the night.—(*Vet. Record*.)

CASTRATION [*By P. A. Wilks, M. R. C. V. S.*].—With such a record as that presented by Mr. W. one can readily appreciate his enthusiasm upon the method of castration he has adopted in his practice. Three hundred cases in five years without losing a life is a success, especially considering the kind of horses he operated upon, viz., Shetland ponies, thoroughbreds and six-year-old cart horses weighing a ton or more. Mr. W. operates with the horse in the standing position and uses chams. He considers his *modus operandi* superior and safer than any other, and for all who wish to try his method he says: (1) See one operation done by a veterinary surgeon who is used to it; (2) operate the first dozen times on cart colts, as they are much easier and give less trouble; (3) do not hesitate, and keep cool—the cooler you keep, the quieter the colt will be; if omentum comes down cut it off; if, unfortunately, bowel should come down, cast him and put it back, but, above all things, *keep cool*.—(*Vet. Record*.)

INVERSION OF THE BLADDER IN A MARE [*By F. T. Harvey*].—This mare had been subject to this trouble on several occasions; the first occurrence being after giving birth to a live foal. During the first week urine was continually dribbling down the legs, scalding the skin and causing irritation. Recently the swelling formed by the inverted organ was less apparent, the mare had wasted very much. The bladder was inverted, with the fundus towards the os; the vagina acting as a sort of false bladder. The œdema was reduced by gentle pressure, and the organ returned in place, after some difficulty, through the urethra. To prevent reinversion a hand was retained in the vagina for twelve hours, tincture of opium, chloral and linseed oil were administered, and bicarbonate of soda added to the drinking water. The trouble has not returned and the mare is fast gaining flesh.—(*Vet. Record*.)

STENOSIS OF THE DUODENUM AS A CAUSE OF VOMITION IN A COW [*By F. T. Harvey*].—A cow was thought to have been choked. However, she presented very little out of the way. She swallowed almost anything given to her, but in a few minutes it was returned with considerable force. She was allowed no solid food for a few days, receiving a purgative, followed by prussic acid. She improved some. Brewer's yeast was tried with good effect, but after awhile vomiting returned, she became tympanitic. Death occurred twenty-eight days after her first attack. At the post-mortem, the gullet was found much dilated in the thoracic portion, with a wide, raw ulcer

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about three inches from the œsophageal groove. The thickening was very slight. Rumen and reticulum contained little food. Omasum and abomasum were impacted, with their mucous membrane thickened. There was an annular constriction in the duodenum feeling like a small scirrhus in one part. There was no ulceration, nor any enlargement of the lymphatic glands.—(*Vet. Record.*)

MILK FEVER.—The modes of treatment of this affection are very numerous, and each has its advocates. Of late the *Veterinary Record* has called the attention of its readers to a new method which from the name of its author has received that of Schmidt's treatment. Several writers, W. Perchale, R. Barron, McGavin and Hardcastle, have published in our worthy contemporary a number of cases, some successful and others fatal, which are deserving of notice; especially the successful ones, which cannot fail to invite a trial of the new method. The translation of the description given by Veterinary Surgeon J. Schmidt, of Kolding, can be condensed as follows: "The udder is stripped, cleansed with soap and water and disinfected with lysol solution, 7-10 gr. of iodide of potassium are dissolved in a litre of fresh boiled water. When the solution has cooled to 40° or 42° it is infused in equal portions into the udder at the four teats, with disinfected wide-bore milk catheters. The infusion has to be accompanied with continued massage of the udder. If the pulse is weak and syncope is feared, 5 g. of caffeine are given in salicylate of sodium solution. At the same time the cow is wiped down, warmly clothed and receives every two or three hours an oleaginous salt clyster. If there is no difficulty in swallowing aloes is given internally." Out of 50 cases of varying severity, Veterinarian Schmidt claims to have saved 46. Comatous condition disappears in four hours, 36 animals got up within 24 hours and some of them in 5, 6, and 7½ hours. These satisfactory results seem to have been obtained also by others.—(*Vet. Record.*) [In this issue of the REVIEW is begun a translation of Schmidt's important article, and our readers are referred to it for full details.—EDITOR.]

FRENCH REVIEW.

RUPTURE OF THE KIDNEY IN A DOG [*By J. B. Scoffie*].—Rupture of the kidney, with fatal consecutive hæmorrhage, is rare in our domestic animals. An 18-months-old dog, appear-

ing indisposed, received a dose of castor oil. The same day, jumping over the door of his kennel, he fell down, and, after a few convulsions, died suddenly. His post-mortem proved most interesting. The abdomen, filled with uncoagulated blood, showed in the lumbar region a laceration of the peritoneum, opening into a large subserous pouch, at the bottom of which was found the left kidney, which presented a solution of continuity, three centimeters long, on the convex external border of the organ, with irregular edges; the solution of continuity was filled with clots. A clot was found in the ramifications of the renal artery, distributed in the centre of the laceration. To find the primitive cause of this arterial lesion, the circulatory apparatus was carefully examined. Numerous vegetations were found on the mitral valve. The ventricle contained some twenty strongyli. The lungs were heavy, sank in water, and when cut through showed, on pressure, small masses of worms rolled and contained in the pulmonary artery. This dog was affected with cardio-pulmonary strongylosis and endocarditis of the left heart; both being the evident causes of death. The valvular vegetations and the fibrinous deposits had evidently given rise to nephritic embolisms.—(*Revue Veter.*)

LARGE SUBCUTANEOUS MYXOMA IN DOG [*By J. B. Scoffie*].—This dog was brought to the author for a large tumor existing for some time, and which recently has assumed large dimensions, disfiguring the animal and undermining its general condition. The growth was the size of a man's head, measuring 19 centimeters in the antero-posterior diameter, 10 in the transversal, and 35 in the circumference at the base. The mass hung from the tenth rib to the coxo-femoral joint; it was movable; its surface was smooth, the skin over it was supple, but stretched. The consistency was soft, fluctuating here and there, and one point gave the sensation of liquid enclosed under the skin. The general condition was much affected, the appetite capricious, strength reduced, the prognosis serious. On exploration with trocar there was escape of colloid fluid mixed with yellow, soft, gelatinous masses, which soon filled the trocar. A free incision was made, and the entire cavity emptied. But when suppuration was established, the general symptoms became more marked, and the animal was destroyed. Minute examination of the part showed the neoplasm to be a pure myxoma; a benignant growth, which had, however, given rise to serious disturbance of general nutrition by its enormous development.—(*Revue Veter.*)

CEREBRO-SPINAL MENINGITIS FOLLOWING A DEEP WOUND OF THE POLL [*By Mr. Roy*].—This is the record of an interesting case, resembling very much what occurs in cases of pithing, though the researches instigated to find the true origin of the trauma remained undiscovered. It was that of a mare belonging to a regiment of cavalry, which was found one morning in her stall, lying down, struggling and unable to get up. After many efforts, and much assistance, she succeeded in rising, but was unable to stand and soon fell down. During her efforts to get up, a little stream of blood was observed escaping from a small wound in the occipital region. The symptoms presented by the animal were characteristic of severe cerebral lesions, cerebro-spinal, and notwithstanding an appropriate treatment, the mare grew worse so rapidly that she was destroyed. At the post-mortem the only important lesion found was the wound in the poll. It consisted of a small incision of the skin, with smooth edges, two centimeters wide, and extending in under the skin through the splenius, small oblique and great posterior straight muscle of the head, as far as the capsular ligament of the atloido-occipital joint. This, as well as the dura mater, had been divided and were the seat of a sero-bloody extravasation extending to the cranial cavity. It was the internal hæmorrhage and its extension to the bulb and pons varolii which had caused the paralysis and the serious cerebral symptoms exhibited by the truly pithed animal.—(*Revue Veter.*)

MULTIPLE CYSTS AND GENERALIZED ANASARCA IN A FŒTUS [*By Mr. A. Delmer*].—After remarking that among the causes of foetal dystokia, due to diseases of the foetus, its malformations or its neoplasms, and which are mentioned by the authors on veterinary obstetrics, there are several which are not uncommonly met with, such as hydrocephaly, ascites, anasarca, contractures of various muscular regions, etc., there is one which has not been named, and that is the presence of cysts developed at the expense of the foetus itself. Having met with one case where the foetus had to be delivered by embryotomy he gives the description of the four cysts which interfered in the delivery: "Four in number, they occupied various regions in the body and were of different dimensions. The largest, situated on the superior border of the neck, measured 24 centimeters in length and 20 in width; a second, smaller, occupied the anterior region of the right scapulo-humeral articulation; a third the middle of the right thoracic wall, and a fourth the same place on the left side. Externally they had the form of

evenly fluctuating masses, not adherent to the internal face of the skin, nor to the tissues underneath. They contained a citrine fluid, transparent, odorless, slightly yellowish and measuring about 1800 grammes in quantity. The internal face of the cysts were smooth; the cavity multilocular, and divided into lodges of various sizes; they were lined with a thin transparent membrane formed of conjunctive tissue lined inside by epithelial cells." Besides these cystic productions, the subcutaneous connective tissue of the fœtus was the seat of an œdema, easily depressed and pitting on pressure.—(*Record de Med. Vet.*)

NOTES UPON INFECTIOUS PARALYSIS [*By Mr. Quentin de Serancourt*].—These are truly the observations of a close observer, who relates the symptomatology of the affection which has received that name in some parts of Europe, principally in France, and which for want of a better name is known in the United States by that of epizootic spinal meningitis. The history of the two outbreaks that he has witnessed, the manner the symptoms occurred, their mode of manipulation, the rapidity of the disease, its fatality—everything points to the fact that the affection he describes and which is so common in the United States, leads one to believe they are identical. The author does not give any indications of treatment different from those that are commonly known, and while he accepts its contagious (?) character as positive, he still puts the questions, "Where and how does the infectious element develop? Are the lesions of the genito-urinary apparatus primitive or are they symptomatic?"—(*Rec. de Med. Vet.*)

AMERICAN REVIEW.

TWIST OR ROTATION OF THE COLON [*By Thomas V. Simpson, V. S., Yorktown, Canada*].—A three-year-old driving gelding, of 900 pounds, was taken sick during the night, and on following morning presented these symptoms: Subacute abdominal pain, lying down a great deal, passing a small quantity of fæces; animal dull, rubbing tail against stall; pulse slightly faster, but temperature normal. No impaction of colon detected by rectal exploration. The treatment consisted in administration of one ounce of aloes and two drachms ginger in solution. Patient worse in the afternoon, no fæces being passed. Barium chloride, gr. vii, given intravenously, after which hard fæces were passed, aided by clysters of warm water. By night

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nothing further having passed bowels, and as patient seemed worse gave barium chloride, gr. x, intravenously, which secured passage of a little more hard fæces. At this time pulse quick and almost imperceptible, temperature 103° F., pain acute and constant, assuming dorsal position when down. Chloral hydrate eased pain and kept patient quiet. Death took place at 2 o'clock the next afternoon, preceded by very acute pain, quivering and sweating, and assuming dorsal position. The post-mortem revealed volvulus, the large colon being twisted at the sternal and diaphragmatic flexures. Very little was found in alimentary canal.—(*Jour. Comp. Med. and Vet. Arch.*)

ABNORMAL POSITION OF THE KIDNEY [*By S. J. J. Harger, V.M.D., Philadelphia, Pa.*].—In an aged gelding upon post-mortem the right kidney was normal in shape, but situated on the lateral wall of the pelvis opposite the neck of the ileum. Its artery was a branch of the external ileac artery, and its vein opened into the pelvic trunk. The ureter, very short, left the posterior extremity of the organ; its termination into the bladder was normal. By rectal examination the organ could have been mistaken for a pathological growth. The left kidney was normal.—(*Jour. Comp. Med. and Vet. Arch.*)

HÆMATURIA FROM UMBILICAL VEIN [*By G. W. Graham, V.S., Fort Perry, Canada*].—An eight-day colt, large and well nourished, from well-conditioned dam, had taken little nourishment for several days. It was continuously on the move, but would not lie down; uneasy; movements stiff; frequent attempts to micturate, passing about four ounces of blood each time, after much straining; mucous membranes highly injected; mouth hot and dry; grating teeth; tongue coated; hurried, panting respirations; small, quick pulse; action of bowels completely arrested; abdomen tender to pressure; abdominal ring enlarged, tense and painful on manipulation; expression dejected. The diagnosis of hæmaturia of umbilical vein, with constipation, was made, and an unfavorable prognosis given. Treatment consisted in placing colt on back and manipulation of umbilical swelling until a gurgling sound was heard. On regaining his feet colt at once passed a pint of blood, confirming diagnosis. Placing patient on right side, the urachus was opened, which was well closed at the lower end for one so young, but it was impervious internally. He now bled quite freely. An antiseptic solution of pyoktanin injected and a pledget of cotton soaked in same was inserted in urachus, which checked the hæmorrhage. Eight ounces of linseed oil were given

as a laxative, and a mixture of zinc, aromatic spirits of ammonia, belladonna, and ginger, in small doses, was given every three hours for two days, along with warm enemas of soapy water. Externally warm-water blankets were kept on abdomen for 24 hours. Next day patient was urinating freely, without blood, but bowels still confined, and appetite gone. Still occupied standing position, but less uneasy. Removing pledget urachus was found closed as before; repacked the opening. Four ounces fluid extract of cascara sagrada were given, continuing stimulant mixture, enemas, and hot cloths. In 24 hours more there was marked improvement, taking some nourishment and resting easily, but no action of bowels. The blankets were now discontinued and four ounces each of castor oil and linseed oil were given, which caused evacuation in fifteen hours. Removal of pledget was not followed by hæmorrhage, but a slight leakage of urine and some pus. From this on improvement continued, making a complete recovery.

SPANISH REVIEW.

VERATRINE IN INDIGESTIONS OF CATTLE [By T. Romo y Bermejo].—An eight-year-old steer presented the following symptoms: Right sterno-costal decubitus, dullness, loss of appetite and rumination, partial chills, looks to left flank; pulse rapid, respiration accelerated, mucous membranes injected. Pressure on the left flank revealed large accumulation of food in the rumen. Treatment—8 centigrammes of veratrine in alcoholic solution (1-20), after disinfection of the skin with sublimate. A great improvement took place in 20 minutes. A second injection, made two hours later, removed all the general symptoms. A third injection, however, was thought advisable, and recovery had so far progressed that the animal took food the next day with great relish.—(*Gazetta de Med. Veterin.*)

VAGINAL POLYPI IN COWS.—Mr. D. Luis Saniz, in the same journal, records cases of which the true etiology was unfortunately not established. Being called one day to attend a three-year-old cow, advanced in gestation, which had large polypi of the vagina, he extirpated them by amputation and cauterization. Recovery was complete in a few days. Several weeks later the author had the opportunity to observe the same trouble in several cows of a close-by farm. The cows were all in good condition and also far advanced in gestation. The polypi were also quite large and occupied the vagina. The same treatment

was applied to them and followed by the same result. All the information that could be obtained about the cause was that all these cows had been served by the same bull, and that this animal, some time before he went to the cows, was delicate and mounted the cows without ambition, and sometimes was unable to serve,—but that after awhile he seemed to recover and regain all his energy.

CARE OF UNSHOD FEET.

A. S. ALEXANDER, V. S., IN "BREEDER'S GAZETTE."

While a great deal is written from time to time regarding the overtrimming of the horse's feet by the shoeing smith, and while there is much truth in the varied complaints set forth by these writers, they seem to forget that judicious trimming is absolutely necessary when fitting a shoe and as necessary in caring for a growing unshod foot. The impractical amateur reiterates the time-worn saying that "The shoe should be fitted to the foot, not the foot to the shoe," whereas the truth is that each should be carefully fitted to the other; hence a proper amount of trimming is necessary and beneficial. We desire, however, to draw attention in this article more especially to the intelligent trimming of unshod feet, for daily we see in young horses the bad results of leaving the hoof entirely to Nature. On stony, hard, or gravelly ground the tendency is for the hoof to wear down somewhat in proportion to the growing process going on continuously. In such districts a tough, fair-shaped foot is developed naturally and all the attention necessary is to rasp away any cracked portions of wall that may be noticed from time to time.

But upon our fertile corn and grass lands where growth is very rapid, excessive secretion of horn may lead to disproportion in the form of the foot, to be followed inevitably by corresponding injurious effect upon the limb. The toe tends to grow too long under the conditions mentioned, and unless it be trimmed occasionally the weight is thrown upon the heels and an undue strain is put upon the tendons. Such overgrown feet are also too high at the heels, and we cannot get this condition without finding also that the frog is drawn up out of ground contact; hence contraction of the heels follows. Overgrowth of hoof may also result in one wall being higher than the other, result-

ing in a canting of the foot which cannot but act injuriously upon the limb, and all such overgrowth, whether at toe or quarter, may lead to serious cracks that prove difficult to cure afterward, but which may be easily prevented by timely trimming.

Such interference with hoof-growth consists merely in reducing the length of the toe and rasping the rough edges of the walls so that the foot shall come squarely in contact with the ground. The frog should be let alone, nor does the sole require any paring. Keep the frog in contact with the ground and the foot will develop a sound normal shape, but leave the walls and the toe alone and the frog will be likely to shrivel up, recede into the sole, as it were, and so lose its most important office.

This trimming of feet does not apply to growing colts only, but also to the feet of unshod horses confined in stables or small paddocks where wear is limited by lack of action. Where horses are turned out for the winter the feet should be examined at least once a month, and all surplus growth of toe and wall removed by the rasp. Where this is done many an incipient case of thrush will also be detected and stopped before the frog has been destroyed and the horses will be ready for spring work with sound feet instead of contracted heels and a corresponding tendency to lameness.

Many a good representative stallion of the imported draft breeds has brought his breed into disrepute in Western districts because of his unsound feet, but the fault lay usually in the owner's lack of proper attention to the feet rather than in the feet themselves or the particular breed of the horse. When a stallion is purchased the foot should be examined at time of purchase, and if it is sound then it can be kept sound by proper care, trimming and shoeing; but no foot accustomed to such care can remain sound when left unshod, untrimmed, and allowed to stand upon a manure poultice for weeks at a time to contract thrush or other evils the badly-treated foot is heir to. "No foot, no horse" is a truism if a horse—"chestnut," but in nine cases out of ten the foot is all right at first, as is the breed, but bad management ruins Nature's work, and man's achievements in breeding and the blame falls always in the wrong place. Intelligent efforts toward breeding profitable grade horses may then prove abortive through lack of attention to the growing unshod foot, for such inattention is a prolific cause of bent knees, straight and "cocked" ankles, corns, quarter-cracks, thrush, and many other troubles which depreciate the value of the horse.

Nor should the growing steer or sheep receive less atten-

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tion, for we have seen a beast fit to win a fat-stock show championship thrown out on account of deformed lame feet, and thousands of cattle and sheep suffer annually from foul in the foot or foot-rot, which might be easily prevented by judicious use of the knife and rasp, and the provision of sanitary environment.

THERAPEUTIC REVIEW.

SOLUTIONS OF CAFFEINE FOR HYPODERMIC INJECTIONS.—

(1) Benzoate of soda, 7 grammes; caffeine, 4 grammes. Place them in a little capsule, with a small quantity of water, and dissolve by heating. Pour the solution in a graduate glass, heated to the water bath, wash the capsule, and add water in sufficient quantity to make 16 cubic centimeters. This makes a solution containing 0.25 centigrammes of caffeine to one cubic centimeter. (2) Caffeine, 5 grammes; salicylate of soda, 5 grammes; warm distilled water, q. s. to make 17 c.c. This solution contains 0.29 centig. to the c.c.—(*Bulletin Veterin.*)

TREATMENT OF ECZEMA.—Against severe acute attacks, accompanied with troublesome itching, Bouk uses a glycerolate made as follows: Pulverized talc and starch, of each 100 parts; glycerine, 40 parts; lead water, 200 parts. Stirred before use, a part of this glycerolate is mixed with twice the quantity of ordinary water. It is applied on the skin with wadding. The itching stops immediately.

INJECTIONS FOR OPEN JOINTS.—The following recommended by Nocard and Cagny is injected into open synovial bursæ with Dieulofay apparatus: Thymic acid, 2 grammes; glycerine, 100 grammes; water, 900 grammes.

IODURATED INJECTIONS FOR HYDROCELES, DROPSICAL CONDITIONS, HYGROMAS AND HYDRARTHROSIS.—Tinct. iodine, 50 parts; iodide of potassium, 2 parts; distilled water, 50 parts. This is recommended by Bouret, who has obtained very good results with its use.

SOCIETY MEETINGS.

NEW YORK STATE V. M. SOCIETY.

The annual meeting of the Empire State Society will be held at the Hotel Metropole, Forty-second Street and Broadway,

New York City, Wednesday and Thursday, September 14th and 15th, and when the REVIEW went to press everything seemed most propitious for a large and valuable meeting. The literary programme is especially brilliant, appealing to every phase of the membership, and we are sure that the publication of the subjects and their authors will bring out a large attendance, for we cannot see how the members can afford to be absent when subjects of so much importance are to be discussed in such close proximity to them. We also urge our New York readers who are not already connected with this society to join it at this meeting, as they need its influence and opportunities, while the society would be greatly strengthened by their co-operation, resulting in great good to both.

Secretary Morris has supplied us with the following list of papers to be read and discussed :

"Glanders and its Relation to Mortality," by Dr. James Law, New York State Veterinary College.

"Nail-Wounds of the Feet of Horses," by Dr. Roscoe R. Bell, American Veterinary College.

"Notes on Tooth Tumors," by Dr. W. L. Williams, New York State Veterinary College.

"Osteoporosis," by Dr. George H. Berns, Brooklyn, N. Y.

"The Science versus the Art of Veterinary Surgery," by Dr. Robert W. Ellis, New York City.

"Hydrotherapy in Domestic Animals," by Dr. W. L. Williams, New York State Veterinary College.

"A New Treatment of Milk Fever," by Dr. Olof Schwarzkopf, Flushing, L. I., New York.

"Streptococcus Injection in Domestic Animals," by Dr. V. A. Moore, New York State Veterinary College.

"Some Experiments with Antiseptics," by Dr. P. A. Fish, New York State Veterinary College.

"Notes on the Embryology of Domestic Animals," by Dr. Simon H. Gage, New York State Veterinary College.

"Relation of the Ligamentum Nuchæ to the First Cervical Vertebra in the Horse," by Dr. G. S. Hopkins, New York State Veterinary College.

"A Simple Test for the Detection of Albumen in Urine," by Dr. P. A. Fish, New York State Veterinary College.

" , " by Dr. E. B. Ackerman, Brooklyn, N. Y.

The Metropolitan members are arranging to entertain the visitors while sojourning in New York. One of the diversions

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will be an illuminated trolley ride from the Brooklyn Bridge to Coney Island, late in the afternoon of the first day, so that it will not interfere with the work of the convention. The route to the sea lies through a very pretty section of Brooklyn, through beautiful suburban villages and parks, and by seaside resorts. At the destination a shore dinner will be served at the Albemarle Hotel, West End, Coney Island, and those who have never enjoyed such a repast should not fail to add this to their list of pleasant experiences in this life. When this has been accomplished, the members will be turned loose in the "Bowery," where the sights of that historic donnybrook may be observed until the hour for the start back to New York.

It is confidently expected that there will be the largest outpouring of members that has ever occurred, and as every arrangement justifies it, it should be the banner meeting of the State Society.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The second semi-annual meeting of this association was held at Faribault, Minn., July 14 and 15, 1898. In the absence of the President, Vice-President M. H. Reynolds called the meeting to order at 11 A. M. at the Council Chamber. Those in attendance were: Drs. W. Amos, Owatonna; J. J. Annard, S. D. Brimhall and C. C. Lyford, of Minneapolis; B. A. Pomeroy and Richard Price, of St. Paul; J. N. Gould, of Worthington; J. A. Hanisch, of Lake City; J. W. Gould, of Fairmont; K. J. McKenzie, of Northfield; M. H. Reynolds, St. Anthony Park; S. H. Ward, of St. Cloud; H. C. Lyon, Hutchinson; James Nicholson, Pipestone; A. F. Lees, Red Wing; L. Hay and Geo. Milligan, of Faribault.

The reports of the Secretary and Treasurer were read and adopted.

Dr. Price reported the appointment by Governor Clough of Drs. Reynolds and Ward on the State Board of Veterinary Examiners.

Dr. Reynolds, chairman of the Committee on Infectious Diseases, gave a lengthy and interesting report on dealing with contagious diseases in this State, including a report of the work done during the past year and of new State laws in that connection.

A discussion then followed on dealing with cases of illegal practice of veterinary medicine and surgery.

At the close Drs. Nicholson and Lyons were elected members of the association.

In the afternoon the members met at L. Miller's livery stable, where Secretary Hay previously gathered in a number of interesting surgical cases, which were operated on as follows:

Removal of diseased molar tooth, and operation for dental fistula of the lower jaw, Dr. J. W. Gould, Worthington; caudal myotomy for straightening crooked tail, Dr. R. Price, St. Paul; caudal myotomy, Dr. K. J. McKenzie, Northfield; cunean tenotomy and cauterization for relief of spavin lameness, —Dr. S. D. Brimhall, Minneapolis; cauterization of tendons for tendinitis, Dr. L. Hay, Faribault; cauterization of tendons, Dr. B. A. Pomeroy, St. Paul; operation on horse's shoulder for the removal of a fibrous growth, Dr. M. H. Reynolds, St. Anthony Park.

The meeting then adjourned until after supper, when it was called to order again at the Council Chamber. Among the business transacted was the election of Drs. Butler and Keyes, of Minneapolis, to membership in the association, and the reporting of a number of interesting cases by the different members of the association.

Friday morning the members assembled again to witness a case of "urethrotomy" for the removal of a cystic calculus. Dr. Reynolds was the operator, assisted by Dr. Lyford. The animal was cast and chloroformed, Dr. S. D. Brimhall being the anæsthetist; the catheter was inserted and Dr. Reynolds proceeded with the operation, which proved to be quite a difficult one, since the calculus was found to be enveloped to a considerable extent by the folds of the mucous membrane; Dr. Reynolds was therefore compelled to use the lithotrite and crush the calculus before its removal could be effected. After coming out from under the influence of chloroform, the animal appeared to be very little disconcerted with what had happened (since we know that it has made a splendid recovery).

Dr. Price then demonstrated a new method of performing cunean tenotomy, which has the advantage of being bloodless. Drs. Reynolds and Brimhall conducted a diagnosis of a case of lameness, while Dr. Hay performed another cauterization for weak tendons.

Dr. C. C. Lyford operated on a horse's nose, removing a couple of sebaceous cysts.

An adjournment for dinner was then taken.

Clinical work was resumed at 2 P. M. Dr. Lyford excised a

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large fibroid tumor out of a horse's shoulder; the animal was cast and chloroformed.

Dr. Reynolds performed the lower plantar neurectomy on both front feet for relief of lameness from navicularthrititis. This finished up the clinical programme of the meeting.

A vote of thanks was tendered Dr. Hay for the abundant clinical material secured, and for the effort in making this the most successful meeting ever held in the State. A vote of thanks was also tendered to Mr. L. F. Miller, of Faribault, for his courtesy in supplying suitable quarters for the holding of the clinics, and also to the proprietor of the Commercial Hotel for his hospitality and courtesy to the members of the association.

The meeting then adjourned.

L. HAY, V. S., *Secretary and Treasurer.*

GENESEE VALLEY VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of the above association was held at the Livingston Hotel, Rochester, N. Y., on July 21, 1898. The meeting was called to order at 11 A. M. by the President, Dr. A. Drinkwater, of Rochester. At the roll-call the following members responded: Drs. A. George Tegg, L. R. Webber, E. Knight and J. C. Mackenzie, Rochester; O. B. French, Henoeys Falls; J. H. Taylor, Henrietta; N. N. Lefler, Geneseo; W. B. Switzer, Williamson; P. J. Johnson, Sodus; G. C. Kesler, Holly; Thos. Flood, Gorham; and E. H. Nodyne, Clyde.

The minutes of the last meeting and the Treasurer's report were read and accepted.

Dr. W. Hunter, of Dansville, was proposed and elected a member.

The committee of incorporation reported that the association had been incorporated in accordance with the laws of the State governing incorporation of societies. It also exhibited a specimen of a membership certificate, which was accepted.

Papers were read by Drs. Switzer and Lefler, and several specimens were exhibited and cases reported, all of which led to a long and very interesting discussion.

The following members were named by the President to prepare papers for the next meeting: Drs. Nodyne, Knight, Kesler, Drinkwater and Mackenzie.

The meeting then adjourned.

A. GEORGE TEGG, *Secretary.*

ALUMNI ASSOCIATION AMERICAN VETERINARY COLLEGE.

The following letter has been issued to the members by President Pendry, and explains itself:

BROOKLYN, N. Y., August 10. 1898.

My Dear Doctor:

In consequence of the several ineffectual attempts, both on the part of the Secretary and myself, to obtain the books and records from the late Secretary; I have been unable to determine upon the several committees, and thereby put in motion the project of the celebration of the Silver Anniversary of the A. V. C. I deem it best to call a meeting of as many of the active alumni who are conveniently near to meet at the college in consultation, so to speak, on Thursday, September 22d, at 3 P. M.

This is a matter that should receive the hearty support of every alumnus of the A. V. C., and I hope that every member who can be on hand will be there to help me with their advice and suggestions in an endeavor to show with appropriate honors our love and affection for Alma Mater on her Silver Wedding.

Yours very truly,
W. H. PENDRY, D. V. S., *President.*

NEWS AND ITEMS.

J. O. GEORGE, D.V.S., of Camden, N. J., has received a re-appointment as meat inspector of that city.

If you cannot go to the Omaha Convention, you can at least get a good idea of its transactions in the October REVIEW.

PROF. W. L. WILLIAMS, of Ithaca N. Y., stopped over in Illinois to visit his parents on his way to the Omaha Convention.

ARTHUR J. HAMMERSTEIN, D.V.S., of St. Louis, Mo., is veterinarian to the fire department of that city. The department owns 300 horses.

WILL the Chicago Veterinary Society resume the discussion of unsoundness in horses when it begins again its monthly meetings? It was very interesting and valuable.

THE REVIEW NEEDS MORE SUBSCRIBERS; it must have them. You can make it a very light task to secure them by calling your fellow-practitioners' attention to its value and helpfulness.

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W. H. PENDRY, D.V.S., of Brooklyn, N.Y., still has a taste for Republican politics. Recently he was unanimously elected President of the 28th Ward Association, which is the second largest ward in the city, having 145 delegates.

WE have received a copy of the Constitution and By-Laws of the Genesee Valley Veterinary Medical Association, and it reflects much credit upon the committee having its compilation and printing in charge, for it is unusually well arranged and printed.

A. N. LUSHINGTON, of Philadelphia, a graduate of the University of Pennsylvania, has accepted the position of instructor in the elementary principles of veterinary and sanitary science and hygiene at the Belmeur Industrial School near Rock Castle, Virginia.

TO CURE A "PULL-BACK."—A good way to cure a horse that pulls at the halter, is to take a stout rope, fasten it around his shoulders, put the other end through the ring in his halter and tie to a stout post. When he finds he is pulling with his body he will soon quit.

READ the report of the semi-annual meeting of the Minnesota State Veterinary Medical Association in this issue, and note what valuable clinics were held. Can anything be of greater interest and benefit to the members? Isn't it an example to be emulated?

FEEDING RAISINS TO HORSES.—A California farmer has been experimenting with his superfluous crop of raisins by feeding it to his horses, giving about twelve pounds a day to each animal. He claims that they relish them, keep in good condition while working, and that it is a great economy to the feeder.

VALUE OF HORSE HIDES.—More horse hides are probably tanned in Newark, N. J., than in any other place in this country. Cordovan vamps are the product. Three, and sometimes four, splits are made and finished. It is estimated that \$16 is realized per hide and the yearly business done amounts, it is said, to \$10,000,000.

PRACTICE DULL IN CALIFORNIA.—On account of an unusually dry season, private practice is reported as very dull on the Pacific Slope, and the outlook discouraging to veterinarians. When the business revival gets well under way the veterinarian's services will be in greater demand than has ever been recorded in history.

DR. FRANK H. MILLER, of New York City, will be married on the 7th inst. to Miss Helen Harris Simpson, of Burlington, Vermont, the former home of the groom. Dr. Miller is well known to the readers of the REVIEW through his recent excellent contributions to veterinary literature on the subjects of "Follicular Conjunctivitis" and "Canine Otorrhœa."

AN IMPORTANT STEP.—Governor Hastings, of Pennsylvania, appointed Professor Leonard Pearson, of the Pennsylvania Live Stock Sanitary Board, as a delegate to the Tuberculosis Congress which met in Paris, the 1st of August. Such intelligent and public-spirited action in the executive of a great State should receive the gratitude of the profession everywhere.

AMERICAN HORSES IN BELGIUM.—During 1897 there were about 5000 American horses sent to Belgium and the volume of importations for this year will be considerably increased. Mr. Von Schelle, the representative here of the Belgium Government, lately made a tour of inspection of American horses and makes a very favorable report. He announces that he finds the American horses free from contagious diseases.

ANOTHER VETERINARIAN IN A SCIENTIFIC POSITION.—Gradually but surely the veterinarian is forcing his way to those positions in sanitary science to which his training so well fits him. One by one the large cities of the country are attaching him to their boards of health, and we know of no instance in which such a step has been retraced. By virtue of his worth he holds whatever he can secure, and reaches out for further advancement. We have just received the news of the appointment by the Oakland (Cal.) Board of Health of Dr. R. A. Archibald to the position of bacteriologist of the department.

A GERMAN BOOMERANG.—Germany is experiencing a genuine meat famine as the result of her severe regulations enforced against American meat and similar restrictions regarding the products of Russia and Denmark. A German journal representing the butchers says: "Away with the prohibition of cattle importation! Each day's delay increases the suffering among the people and the resultant danger." A society for the protection of the German meat trade and industry asserts that of the 3003 cases of trichinosis which have been recorded in Prussia during the last fifteen years not one is traceable to American salt, corned or preserved pork, and offers a reward of 1000 marks for proof to the contrary.—(*Breeder's Gazette*.)

THE NEW YORK SPEEDWAY.—The light harness horse having been crowded from his old haunts in upper Gotham by the

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advance of building and the invasion of the bicycle, the owners were without any facilities for speeding, or even pleasure driving. To overcome this legislative enactment was secured, and the Speedway constructed for the exclusive use of light vehicles. It was thrown open to the driving public recently, and about the first thing that followed was a suit to mandamus the Park Commissioners and prevent them from restraining the use of the bicycle upon this the only spot on earth which it was hoped would be kept sacred from this universal nuisance. To the everlasting honor of the court, the application was peremptorily refused.

DID THIS HORSE RUPTURE THE FIBRES OF THE ŒSOPHAGUS?—A patient was brought to the hospital of the junior editor of the REVIEW suffering from gastric indigestion, but while his breathing was labored, no eructation of gas occurred. He was extremely sick, hanging his head to the ground, making a spasmodic squeal every minute or two, as though endeavoring to vomit. In an instant he broke into a profuse perspiration, the sweat coming in drops from his face, ears, and neck. Gas began to regurgitate, coming up the œsophagus in great volumes. He was scraped, rubbed dry with alcohol, and seemed much relieved. In a few hours he was eating and out of danger. Did the spiral fibres rupture, relaxing the œsophageal opening to the stomach, permitting of the escape of the confined gas, and save a rupture at the greater or lesser curvature?

SPRAYING CATTLE FOR TICKS.—Dr. W. K. Lewis, the well-known veterinarian of this place, has just received an apparatus that may in the future play a prominent part in freeing cattle from fever-producing ticks. It is a large tank of galvanized steel made for the purpose of containing oil or any other liquid found to be the right thing for the destruction of cattle ticks. Some time ago Dr. Lewis evolved the spray theory for ridding cattle from ticks, and made some experiments which satisfied him that it was the cheapest and most effective manner of successfully destroying the dreaded *boophilus bovis*. Dr. Lewis' proposed spray method is an application of the tick-destroying fluid by means of a spray to the animal's hide, applied through a hose under strong pressure by means of compressed air. By this means he believes he can use every drop of the liquid and effectually reach every portion of the animal's body, using a comparatively small quantity of the liquid and reducing the expense far below that which would be incurred by the dipping

vat. The idea is entirely original with Dr. Lewis, nothing of the kind having ever been attempted before. He estimates it will require the expenditure of but a few pints or quarts for each animal infested with ticks. The tank is set upon wheels and Dr. Lewis proposes to haul it around to the infected herds and make the applications, thus rendering the building of dipping vats or driving cattle to them unnecessary.—(*West Texas Stockman, Colorado City.*)

A VETERINARIAN IN A "SMASH-UP."—Dr. W. T. Monsarrat, the American veterinarian, who has done so much for the profession in our most recently annexed colony (Hawaii) figures prominently in the following story, from the Honolulu *Advertiser* of June 9: "A horse that American Minister Sewall has been using a few weeks freed itself from a rig out on Beretania Street at noon yesterday and made a run for a stable down town. Directly in front of Central Union Church the excited horse, travelling at a strong gallop, overtook Will Monsarrat in his rig. Theo. Hoffman, who was driving near, shouted a warning to Monsarrat, but it was too late. The runaway horse dashed into Monsarrat's outfit and in a twinkling there was a mixup of two horses, a carriage and a man. Mr. Monsarrat escaped with a few bruises and disordered clothing. His horse was cut somewhat and the runaway horse was quite badly injured."

HORSE INSURANCE HARD TO GET.—It is not possible now to have a valuable horse insured in this city. A year or two ago there were several horse life insurance agencies here. Many horse owners have their stock insured outside of the State. At last accounts the only horse life insurance company in New Jersey had headquarters in Canada. Horse life insurance appears to have been disastrous to every capitalist who has touched it, and after taking advantage of experience gained in both Europe and America, it is still an experiment. Speaking to an agent of one of the defunct companies regarding the failure of horse life insurance, he gave various reasons for the want of success. In the first place it requires extensive capital, which cannot always be had. In Europe horse life insurance has been tried for 100 years, with a fair share of success to the investors in the enterprise. In this country it has been conducted on various plans, and many of the schemes failed to meet the end for which they were designated. After meeting heavy losses, very vigorous ruling was adopted by several of the companies as to the character of the risks. Car horses, driving horses, fancy-priced horses, runaways, blind horses, cribbers,

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cab horses, omnibus horses and business horses were ruled out. This only left very choice risks, such as family carriage horses and well-kept horses doing light draught work. The principal reason, however, for non-success was want of sufficient capital to keep the project going.

An experiment in horse life insurance was tried in New York some years ago by the Retail Grocers' Union, an organization of about 1000 members. Inside the Union a horse-insurance fund was started, and $1\frac{1}{4}$ per cent. was collected on the amount for which each horse was insured, while losses were sustained pro rata by the members in the scheme. No horse was insured for over 75 per cent. of its value. In less than eight months losses by pneumonia and other diseases were so great that the grocers were compelled to raise the dues to 2 per cent. Most horse owners are satisfied if they insure their stables for a good round sum, imagining that most of the danger to their stock dying suddenly is in the direction of fire.

Probably the heaviest insurance ever placed upon a horse to protect the owner against loss by death was the amount for which Blundell Maple, Member of Parliament for Dunwich, had the famous racer Common insured. He paid a premium of £500 for an insurance of £10,000. He also made a similar provision against the premature death of Plaisanterie, which was a yearling at the time. He paid 6000 guineas for the colt and insured it for £5000 at a premium of £300. The insurance was a novelty in England at the time and was a good deal talked about.—(*Newark, N. J., Sunday Call.*)

THE STATE OF VETERINARY SCIENCE IN ENGLAND.—At a meeting of the Central Veterinary Medical Society, held at the Royal College of Veterinary Surgeons, Red Lion Square, on the 7th inst., Mr. H. Sessions, of Brighton, read a paper on "Veterinary Sanitary Science," in which he pointed out how greatly this country was behind other continental nations in methods for the suppression and prevention of diseases among animals. He said that had all counties and boroughs in the kingdom competent veterinary officers of health, and gradually taught, by issuing minimum regulations, that air and light were essential for stabled animals, an immense amount of loss and disease would have been prevented. Gradually in town and country more attention would have been paid to these matters, and the sheds and houses altered to meet the requirements. Periodic ophthalmia, many cases of colds, pneumonia, many virulent attacks of influenza, glanders would have been unknown; while that wide-

spread disease, tuberculosis, as to which he gave evidence before the recent Royal Commission—a disease that caused such a large annual loss among our cattle, and whose reach appeared to extend through cattle to the loss of human life—would, at least, have been kept within much smaller limits. In this one respect a sum would have been saved the country large enough to maintain a veterinary sanitary service for a generation. In existing circumstances there was no uniformity of action and no centralization of the work done. He suggested that at the Board of Agriculture there should be an inspector to tabulate the cause of animals' deaths. Every county or large district needed, and had plenty of scope for a veterinary officer, whose whole time should be devoted to executive work. It was highly desirable that the Veterinary Department of the Board of Agriculture should be in active touch with the veterinary profession throughout the country, with a progressive policy of its own, and with competent officers in every district, its aim being to render applied veterinary sanitary science second to the practice of no other country, but in advance of all other nations, as befitted a land whose flocks and herds were the finest in the world. In the discussion which ensued, Mr. Sessions' views were unanimously approved, Mr. W. Hunting, ex-President of the Royal College of Veterinary Surgeons, contending that the Veterinary Department of the Board of Agriculture greatly required strengthening.—(*Mark Lane Express*.)

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